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ABSTRACT

This guide focuses on learning about and teaching with the Internet in marketing education. Section 1 on preparing teachers to go online focuses on the Internet as a place to talk, get information, and organize and put information. It covers needed hardware and software, controversial facts about the Internet, and acceptable use policy. Section 2 provides exercises in worksheet format that introduce the teacher to the Internet, its electronic tools, and sources of information and ideas. Written to the student as preparation for online contact, section 3 is a "driving manual" designed to give the student driver guidance for preparing for Internet driving and knowledge on what to expect while on the superhighway. At the end of the section is a two-part "driving test." The first part is a written examination dealing with electronic mail and discussion lists; the second is a skills test, using the treasure hunt format to locate information on the Internet. Section 4 provides lesson plans that will support and enhance student learning using online resources. They cover a variety of marketing subjects and focus on the current marketing education student learning outcomes. Each includes an anticipatory set, objectives, materials, procedures, closure, and addresses of Internet resources that may help provide content for the lesson. A resources section lists Internet addresses used in the guide and 19 print resources. Copies of Classroom Connect and The ERIC Review issue on K-12 computer networking are attached. (YLB)

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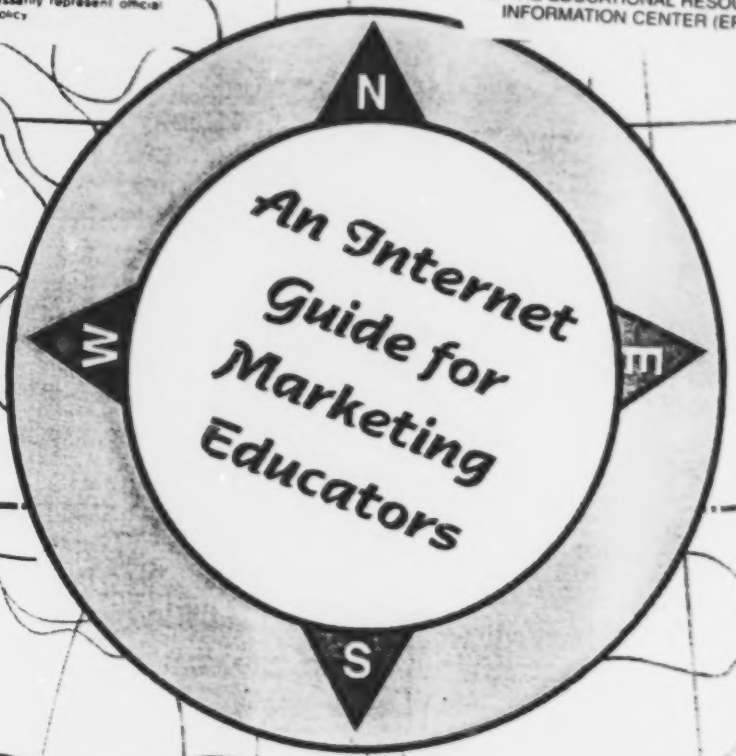

Site-seeing on the Information Superhighway

Instructional Materials Laboratory
University of Missouri - Columbia
Missouri Department of Elementary and Secondary Education

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Due to the dynamic nature of the Internet, the addresses for Internet sites contained in this Guide may have changed since the publication date.

Site-seeing on the Information Superhighway

An Internet Guide for Marketing Educators

June 1996

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INTRODUCTION

WHY THE INTERNET AND WHY NOW?

The answers to these questions will be provided throughout this Guide. Basically, the answer is because it's here–NOW–and because there is a drive at the federal and state levels to bring the Internet into all classrooms by the end of the century. If teachers don't teach students how to use the Internet effectively, they will not have prepared them for a future in which the Internet and other related electronic communication systems will play an increasingly important role. A global workplace calls for teaching and learning new tools for proficiently completing tasks. However, learning new tools–and especially one as dynamic as the Internet–must be grounded in curricular needs and teaching methodology. This Guide will provide the rhyme and reason for using the Internet in marketing courses.

The organization of this Guide is designed to serve three purposes:

- To provide the runway for learning about the Internet,
- To provide the runway for teaching with the Internet, and
- To be a living document that can be expanded as you add new ideas and resources to enhance your classroom teaching.

The Guide should take on the characteristics of your teaching style and should reflect the needs of you and your students. The Internet is a tool that can be used to enhance your teaching and students' learning and to introduce you and your students to one more data resource. It is constantly changing, which means that you and your students will have to learn how to adapt to a changing environment and make adjustments to productively use this tool.

Teachers from around the world are using the Internet in various ways. Some of these ways include:

- To keep in touch with friends and professional peers,
- To obtain advice on travel,
- To find software freebies, or information about computer repair
- To keep up-to-date in their subject areas,
- To find lesson plans and teaching ideas,
- To discuss educational issues,
- To enable their students to make connections across borders,
- To provide their students with opportunities to gather and analyze information, and
- To involve their students in national and international projects.

You will be introduced to all of these uses and more in this Guide.

WHAT IS THE INTERNET?

The Internet has been defined as a vast collection of computers linked to one another and a vast community of people sharing information and ideas. Other definitions of the Internet include:

- a network of networks stretching around the world,
- a warehouse of information,
- the information superhighway,
- a virtual community,
- a place to talk,
- a place to get organized (and unorganized) information, and
- a place to organize and put information.

Although all of these explanations in some way describe the Internet, the last three components give the Internet the most significance in the classroom. Understanding these three components can help you and your students manage your time on the Internet effectively. This section focuses on the Internet as a place to talk, a place to get information, and a place to organize and put information.

'NET FACTS

With all the talk about the Internet, the information superhighway, and on-line services, here are some definitions to help you sort it out. Other terms will be defined where appropriate in the guide.

- **Commercial networks** are owned and managed by specific companies. The companies charge for the use of their networks. They usually provide access to the Internet, as well as other services. The most popular commercial networks include America Online, Prodigy, CompuServe, eWorld, and Genie.

- **Dial-up access** refers to the use of a phone line to communicate between your home or school computer and the Internet. Dial-up access is slower and cheaper, thus providing almost universal access for individual users.

- **Direct access** refers to a special high-speed connection between a local computer or computer network and the Internet. Businesses and schools prefer to use direct access because it is much quicker than dial-up access.

- **Graphical connections** to the Internet allow for "point-and-click" access, similar to the point-and-click access of Windows® applications.

- **Home page** is the first page of a Web site and is the link to other pages of that site. It serves as the title page of a site and contains an index of other pages that you can access by clicking on a "button," which is graphical anchor that is the source of a link. A button often looks like a push-button.

- **Hypermedia** is the means of storing information in files so that any word or picture can refer to any other file in the system.

- **Hypertext Markup Language** (html) is the markup language representing the content and design of documents that can be displayed on a World Wide Web browser.

- **Hypertext Transfer Protocol** (http) is a Web language protocol that links files together and allows for quick, easy retrieval. Most Web pages are accessed by using URLs (uniform resource locator)–a pointer to Web sites on the Internet–delivered to you via http. A URL indicates that the site is a Web page on the Internet. An example of a URL is:

  http://www.spb.su/index.html

  The URL above accesses the guidebook to St. Petersburg, Russia.

- **Login** is the command that identifies the user to the computer and starts the process of validating the user's password.

- **Text-only connections** mean the information accessed on the Internet can only be viewed in a text format.

- **World Wide Web** (WWW or Web) is the entire set of accessible Internet documents (containing text, pictures, sound, and more) connected to each other with hypermedia links.

- **Web page** is a hypermedia document on the World Wide Web.

Armed with these 'Net facts, you are now ready to begin your journey into learning how to use the Internet as an instructional tool.

A Place to Talk

If the Internet is a community of people, it makes sense that people will want to use the Internet to communicate with each other. This communication is the Internet's ***resource exchange*** component. Communication on the Internet is handled in two ways: (1) by writing, using e-mail capabilities, or (2) by using a "talk-like" service that allows people to communicate in "real" time. Each of these modes calls for different skills and tools. This section covers the tools that allow people to communicate electronically on the Internet.

Note for teachers: An exercise guide for using the Internet tools listed below is included in the section "Practice . . . Practice . . . Practice."

- **Bulletin boards** are designed to share information with other people and to catalog interesting ways to communicate to a small or large

group of readers. Bulletin boards use one-way communication. That is, the information is posted by a bulletin board manager to be read by those who have subscribed to the service. In this way, bulletin boards are much like listservs. Special software is available for setting up an electronic bulletin board. Electronic bulletin boards have fallen on hard times with the advent of Web home pages; however, in some localities they are still being used for specific discussion purposes. Look into their use in your community. You may want to create an electronic bulletin board in your class or school.

- **Electronic mail (e-mail)** is one of the most common and most useful services of the Internet. It allows users to send messages, reports, letters, memos, invitations, etc. among themselves: person-to-person, discussion group-to-individual, or group-to-group. To use e-mail, each user will need an Internet account as well as a unique e-mail address and password. You will need to check with the technology person on your campus to set up your unique e-mail address and to see what software is being used to send and receive e-mail. Below is the breakdown of what makes up an e-mail address. (For more information, see "Accessing the 'Net" in the "Preparing Students to Go On-Line" section.)

_____	@	_____	.	_____
userid	@	host/domain	.	subdomain
(You)	@	(Computer's site)	.	(Type of Address)
Brendas	@	auvix	.	org (organization)
dateline	@	abc	.	com (commercial enterprise)
president	@	whitehouse	.	gov (government)

- **Inter-Relay Chat (IRC)** is a "talk-like" service that allows many people to communicate at the same time. The IRC sets up channels where people can congregate and talk. Unlike listserv messages, messages written using an IRC are immediately broadcast to every other channel member. Used in conjunction with *CU-SeeMe* software, the IRC allows for real-time meetings and conferences on the Internet. This service can be an exciting auditory and visual Internet experience. However, the equipment needed to set up this kind of conference must be used by all parties. To have a successful IRC link, users must have similar software, cameras aimed at the users on both ends, computer monitors that can relay images, and coordination of time and place. If you are interested in exploring the possibilities of IRC, read the IRC frequently asked questions (FAQs) list located at the following site:

  http://cbl.leeds.ac.uk/nikos/tex2html/examples/IRCprimer1.1/IRCprimer1.1.html/

- **Listservs** are a means of exchanging information between people that share common interests, hobbies, professions, etc. Listservs get started because someone wants to offer a discussion on a particular subject or topic and finds a computer that will "host" the discussion. Interested users "subscribe" to the discussion to receive the information from the supplier of the information. Listservs also are called newsgroups, announcement lists, discussion groups, or mailing lists.

  To join the education and technology listserv, send an e-mail message to ***listserv@msu.edu***. The message should contain the following information:

  Address: type in your e-mail address, if it does not automatically appear

  Subject line: leave blank

  Body of message: type: ***subscribe EDTECH*** **(your name)**

  For a more up-to-date list of mailing lists (listservs), try one of the following sites:

  http://www.neosoft.com/internet/paml/
  http://www.tile.net/tile/listserv/
  gopher://dewey.lib.ncsu.edu/11/library/stacks/acadlist/
  http://www.liszt.com/

- **Usenet** is a large collection of discussion groups involving millions of people from all over the world. Each discussion group is centered around a particular topic. To read information and other people's messages on different topics on this worldwide bulletin board system, a news reader program is needed. Newsgroups of interest to vocational educators might include:

  alt.education.distance
  misc.education
  news.k12.ed.business

  Access to newsgroups is easy. If Netscape is your newsreader, simply press the "Newsgroups" button on the Netscape opening page and you will be presented with a list of accessible newsgroups. The hard part is deciding which newsgroup(s) to read. Some Internet providers carry more than 6,000 groups. Since you are connecting to newsgroups through a school district, you may have access only to newgroups appropriate for use in the classroom.

WRITTEN ELECTRONIC COMMUNICATIONS

Many teachers use e-mail and other tools mentioned here to provide a forum for students to write to varied and distant audience(s)–an individual or group of individuals in a different town, state, or country. This activity makes writing a real-life process, yet complicates the student's writing process. A review of the writing process ***before*** students go on-line will underscore the importance of communication as a life skill, and it provides you with the opportunity to reinforce the importance of communications in the business world.

Written communications activities to use prior to going on-line include brainstorming for idea generation, composing and editing messages, and making a presentation. In particular, composing and editing have become the domain of word processing software; this domain has been made more sophisticated with the addition of the thesaurus, dictionary, and grammar-correcting capabilities. These tools will take on significance in the classroom when they are used in conjunction with electronic communication. You may find it helpful for you or your students to compose, edit, and prepare e-mail messages off-line before accessing an individual or group through the Internet.

If you use the above process, you will save the message as an ASCII test file on a floppy or hard disk, then upload it into your e-mail file. (American Standard Code for Information Interchange is a coding system for a standard set of characters. Each character is assigned a number from 0 to 255. These codes allow information to be exchanged on digital devices. Computers around the world communicate by sending ASCII text to each other, so that they do not need to worry about conflicting file formats.) Ask the technology specialist on your campus to demonstrate this process to your class; each e-mail software package uses a different protocol for sending and receiving e-mail.

Professional Development for Teachers on the Internet

Electronic mail tools may be used for teachers' professional development and personal enhancement. The feeling of isolation that is so common for teachers can be defused when it is possible to "talk" to others in different schools and gather a world of ideas from resources on the Internet.

Professional Development Tools Found on the Internet

- On-line college courses
  http://www.caso.com/iu/courses.html/
- On-line discussion groups
  http://k12.cnidr.org:90/lists.html/
- Electronic journals and books
  http://www.iti.org:80/staff/ezines.html/
- On-line conference and symposium information
  http://www.edunet.com/evendex.html/
- On-line curriculum information center
  http://iml.coe.missouri.edu/

See the "Internet Resources" section for more information and addresses.

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A Place to Get Information

The second component of the effective use of the Internet is a ***resource locator***. All teachers have an interest in showing students how to locate and process data, how to use data ethically, and how to transform data into knowledge and useful information. The Internet overcomes the constraints of time, distance, money, and physical structures so that information can be placed readily into the hands of students. The challenge is to find the right kind of information at the right time in order to make a timely decision.

To navigate the Internet, you will need a Web browser (a piece of software that makes connections to remote computers, retrieves files, interprets http codes, and displays the Web pages). Common Web browsers include Lynx, Mosaic, or Netscape. Netscape and Mosaic are the most popular. After gaining access to the Internet through the browser, a search engine (a vehicle that searches the World Wide Web for a specific location) will assist you and your students in finding the information. The most often used search engines include Alta Vista, Archie, Infoseek Guide, Lycos, Veronica, Web Crawler, WAIS, and Yahoo!.

Many tools are available for accessing information on the Internet. There are dozens of search engines that vary in how much data they have access to and the speed with which they access this data. Some are easier to use than others; most are free. The more common search tools are discussed below.

- **Alta Vista** is a search engine for pages on the World Wide Web. Alta Vista combines a Web crawler with an indexing software and has indexed more than 16,000,000 Web pages. To use Alta Vista, access its home page site:
  http://altavista.digital. com/

- **Archie** is a search tool for files available via FTP; you may access Archie by connecting to certain computers on the Internet. Archie works by asking each computer on the Internet what files it has available and keeping a list of all those files and where they can be found. (A list of Archie servers is included in the "Practice . . . Practice . . . Practice" section.) To find a specific file or directory on the Internet using Archie, type: *find* and all or part of the file name. If the file name is not specific, you may be overwhelmed with files. Archie is used best when you know the name of a specific file, but you don't know where to find it.

- **File Transfer Protocol (FTP)** is the process of transferring data files from one Internet-connected computer to another. FTP is not the only way of transferring files; there are several graphic or picture-oriented methods that make file transfer very simple. For more information, visit:
  http://www.lib.ox.ac.uk/internet/news/faq/archive/ftp-list.faq.html/

- **Gopher** is a hierarchical menu system that provides enhanced access to files on the Internet. Gopher is named after the mascot of the University of Minnesota, where it was developed. To reach a Gopher system with a text-only connection, simply type: *gopher* at the command prompt. At the numbered menu, type the number of

the item you want. If you type: *gopher://gopher.tc.umn.edu* at the command prompt, the menu looks something like this:

```
      Internet Gopher Information Client v2 ) 16

 1.    Information about Gopher/
 2.    Computer Information/
 3.    Discussion Groups/
 4.    Fun & Games/
 5.    Internet file server (ftp) sites/
 6.    Libraries/
 7.    News/
 8.    Other Gopher and Information Servers/
 9.    Phone Books
10.    Search Gopher Titles at the University of
       Minnesota<?>
11.    Search lots of places at the University of
       Minnesota <?>
12.    University of Minnesota Campus Information/

Press ? for Help, q to Quit, u to go up a menu Page: 1/1
```

If you have access to a graphical connection and a Web browser, Gopher may be reached through the Web by typing: ***gopher://*** or ***gopher://gopher*** in front of the address.

Two of the nice things about Gopher are that there's no extra software required–it's all run on the Internet–and a text-only connection is very simple way of getting information.

- **Infoseek Guide** is a search engine that integrates Internet browsing and searching, which enables users to access Web pages, Usenet newsgroups, FTP and Gopher sites, and other Internet resources. To conduct an Infoseek Guide search, visit:
  http://guide.infoseek.com/

- **Jughead** also searches Gopher, but it only searches particular Gopher computers. Jughead works behind the scenes; you may not even know when you are using it. Using Jughead is easy: choose the Gopher menu item that says "Search the Gopher using Júghead" (or something similar).

- **Lycos** is a search engine for http, ftp, and Gopher sites. Lycos uses "spiders" to create catalogs of Internet sites and provides a search engine for users to conduct queries. Lycos updates its catalogs on a daily basis and currently estimates that it has access to 91% of the Web sites. To conduct a search, visit:
  http://www.lycos.com/

- **Mosaic** was the first WWW browser developed by the National Center for Supercomputing Applications (NCSA) at the University of Illinois. Released in 1993, Mosaic is one of the standard tools for browsing the Web. To access Mosaic's home page, visit
  http://www.ncsa.niuc.edu/SDG/Software/Mosaic/NCSAMosaicHome.html/

- **Multi-User Domains (MUDs)** are the closest the Internet comes to virtual reality. These domains also are called **MOOs** and **MUSHes** as well as a few other acronyms. By whatever name they are known, they essentially are the same thing–a fantasy world of text (games) where users can interact with the environment and each other simply by typing into their computer what they wish to do. A few experimenters are seeking to turn these domains into conferencing tools for research and education. If you are interested in learning more about MUDs, visit this site:
  http://www.cis.upenn.edu/~lwl/mudinfo.html/

- **Netscape** is a popular World Wide Web browser and a graphical newsreader. A Web browser can find a file using a site's uniform resource locator (URL), which points to its place on the Internet. A typical URL looks like this:
  http://www.halcyon.com/ResPress/welcome.html/

  The first word, ***http***, stands for Hypertext Transfer Protocol and indicates that this address is a Web page. The remainder of the URL indicates which computer on the Internet holds the file, where the file is located on that computer, and what the file's name is. The above URL points to the location of the home page of the publisher Resolution Business Press. If Netscape is not your Web browser, you may access its home page at the following address:
  http://www.netscape.com/

- **Telnet** is a special text-based program that uses the Internet to connect you to another computer. As long as you know the computer's electronic address, you can connect to it. Actually, you're connecting to another computer and using it as if you were actually ***there*** at that location. Your computer is the "local" computer; the one to which you're connecting is called the "remote" or "host" computer.

  All you need to do to access your Internet service's Telnet program is type in the address of the computer you want to "go" to and identify yourself with a userid and password (if asked). Usually the dialog box on the Telnet screen will tell you the login you must use to access the system, how to erase mistyped information, and how to exit the system. Read this information! If you ever get stuck, you can enter ^*]* (press and hold the "Control" key and type a right bracket). These keys will break the connection with the remote computer. Once you log in to the other computer, you have to play by ***its*** rules.

- **Veronica (Very Easy Rodent-Oriented Net-Wide Index to Computerized Archives)** is a search tool for the Gopher system; it is usually accessible through Gopher itself. Much like Archie, Veronica compiles an index of all of the menus on all of the Gopher systems available. Using Veronica is easy: choose the Gopher menu item that says "Search the Gopher using Veronica" (or something similar). The Gopher program will ask for a search term and build a menu of items that match that term.

- **WAIS (Wide Area Information Server)** is a means for finding ***textual*** information within databases distributed among many computers on the Internet. WAIS provides a user-friendly interface for retrieving information from diverse databases. It can search through many large documents for the occurrence of keywords and provide a scored list of the documents that are most relevant to the query. To access WAIS via Telnet, type:
  quake.think.com
  (login: wais)

  To access WAIS via the World Wide Web, type:
  http://www.earn.net/gnrt/wais.html/

- **World Wide Web (WWW or Web)** is a worldwide system made up of thousands of computers, all linked to each other with hypermedia links (a means of storing information in files so that any word or picture refers to any other file in the system). The Web provides access to a large universe of documents and to full-text documents, articles, reference tools, music, movie clips, programs, etc., which accounts for its popularity. The Web has been in existence since 1992 and has all but taken over the Internet.

  There are two ways to access the Web: (1) text-only connections such as Telnet or special software called "lynx" and (2) graphical connections such as a Web browser (a software program that will find and display Web pages). Two of the most well-known and used Web browsers are Netscape and Mosaic. Netscape is probably the favorite browser since it is free to students and educators.

- **Yahoo!** is a search engine for the World Wide Web. Yahoo! is considered to be the premier starting point on the Web, offering searchable, regularly updated indices to more than 30,000 sites. To access Yahoo! and its directories, try this link:
  http://www.yahoo.com/

The Internet can be a wonderfully effective research tool–sometimes. The information is generally up-to-date. However, it is not an encyclopedia and makes no claim of completeness or reliability. It might be characterized more as a piñata or grab-bag than a complete file of data. New information is available daily; old information or sources that are here today are gone tomorrow, and some search tools may prove to be unstable. Still, just as you want your students to be familiar with the library, you will want your students to know how to devise searches, carry out searches, and download and manipulate the data they find into useful information–a very important career skill.

A Place to Put Information

Lastly, the Internet is a place to put information–this component might be called the ***resource creation*** component. This component is an excellent classroom tool because students utilize higher-order thinking and decision-making skills to collectively create and organize materials to place on the Internet. These skills

change students from users of information to creators of information and parallel the skills needed in the workplace. Having your students design a home page for the World Wide Web will teach them to use the tools for creating products.

Resources for Creating a Home Page

One of the most common tools for creating and placing information on the Internet is through the development of a Web page for the class or your school. Before creating a home page, ask the question: What in your class/school/community is unique enough to share with the world? When you have the answer: Plan it. Create it. Organize it. Digitize it. Publish it. Share it. This home page becomes your school's unique "self."

To plan and execute a home page, you may want to access some resources that will enhance and simplify the process. In particular, you will need to become familiar with resources that explain html protocol. Just as there are many languages used by humans, there are many languages used by computers to communicate with each other. These "languages" are called ***protocols*** and, just like spoken languages, conform to a defined set of rules. FTP, Gopher, Telnet, and Web files all use different types of file protocol. Web pages use ***html*** (hypertext markup language) protocol. Here are a few resources to help you familiarize yourself with html and other components of a Web page:

National Center for Supercomputing Applications
A Beginner's Guide to HTML.
http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html/

HTML Editors Software. E-mail for a list of HTML editors to:
info@classroom.net.
In the message body, type: send htmltool

Image Systems Company
ftp.classroom.net.
Go to the "Wentworth/Clip-Art" subdirectory

http://www.itw.com:80/~imagesys/

Maggie's Guide to HTML Authoring Resources
http://www.mindspring.com/~mconti/html.html/

Background colors
http://www.infi.net/wwwimages/colorindex.html/

Web newsgroups
http://boutell.com/%7Egrant/web-groups.html/

International WWW Schools Registry
http://web66.coled.umn.edu/schools.html/

ClassroomWeb
http://www.classroom.net/classweb/

Classroom Connect
http://www.classroom.net/classroom/web-info.html/

Mount your pages for free! You may send your school's Web pages (limit of 2) to *Classroom Connect* and they'll mount them at no cost. For more information, e-mail to:

classweb@classroom.net
In the subject line, type: SchoolWeb Page
In the message body, put your school's name, teacher's name, address, telephone number, and e-mail address.

or URL
http://www.classroom.net/classweb/

To automatically generate a home page on the World Wide Web, visit:
http://www.clark.net/pub/alweiner/cgi-bin/homepage.cgi/makehome/

The impetus for schools to mount a Web page on the Internet may come from many sources: classroom teachers, the technology specialist or coordinator, students, or parents. If you are interested in creating a Web page for your classroom or school, contact your technology person to see if a Web page already exists for your school or district. If so, ask to be included on it. Many times the technology specialist will start the process and ask teachers to participate. Web pages are one of the fastest growing interest areas on the Internet.

BEST COPY AVAILABLE

CONNECTING TO THE INTERNET

Getting connected to the Internet is becoming easier with each passing day. There are so many possibilities. In Missouri, Internet access has been simplified with MOREnet. MOREnet (Missouri Research and Education Network) has been developed and funded by the Department of Elementary and Secondary Education (DESE) to provide teachers with the technology tools needed to enhance student learning. The goal of the DESE Technology Network Project implemented through MOREnet is to connect all school districts in Missouri to the Internet.

Before you can use the Internet, someone from your school district who knows about computers will actually connect you to the Internet and will inform you about the following equipment, products, and computer capabilities you may use to access the Internet:

- **Personal computer**–an IBM-compatible (running Microsoft Windows® is preferable)–**or Macintosh** with at least 8 megabytes of RAM.

- **Modem**–the piece of equipment that connects your computer to a telephone line–can be either external or internal. The current standard speed for modems is 14,400 bits per second (abbreviated as 14.4 and usually spoken as fourteen-four). However, you will be able to access text and graphics with little or no delay, depending on the amount of traffic on the Internet, if you have a modem with 28,800 (28.8) bits per second.

- **Software** from commercial networks, such as Prodigy, America Online, or CompuServe. The commercial networks usually give a few hours of trial time free of charge but, after that, charge a monthly fee plus an hourly user's fee. When signing up for one of these services, be sure you ask for Internet access (and parental control services, if appropriate).

- **Dial-up access**. Using your modem to access a telephone line to communicate between your computer and the Internet. Usually this type of access is slower, cheaper, and more universally used by individual users.

- **Direct access**. Using a special high-speed connection between a computer network (in MOREnet's case, the University of Missouri-Columbia) and the Internet. This access is quicker than dial-up access.

- **Internet account**. Personal space on a computer connected to the Internet. This space is usually provided by commercial software providers. Having your own Internet account means that you can send and receive e-mail, store personal files, etc.

- **Internet access**. The right to use software programs provided on a large computer network connected to the Internet. These software programs provide services, such as file transfer, remote computer access, e-mail capability, access to newsgroups and discussion groups, etc.

- **Internet address**. Your school may provide you with your own computer and Internet access or you may have access through a computer in a shared location, such as the school library or media center. In either case, you will have your own Internet address.

- **Internet connections**. Two categories of connections are available: (1) text-only and (2) graphical. These connections are explained below:

  1. Text-only connections can only read text; there are no buttons, pull-down menus, fonts, or graphics to help you get around the Internet. If all you want is e-mail capabilities, a text-only connection is probably adequate. If you want to cruise the Internet, a text-only connection will not be sufficient.

  2. Graphical connections allow you to "point and click" your way around the Internet, similar to the Windows® environment. Using MOREnet to access the Internet, you will have a graphical connection, which will enable you to download lesson plans, send and receive e-mail, and access a global community of teachers and students. Actually, the Internet opportunities are endless–all you need is time and patience, because sites are appearing and disappearing daily. It is a very ***dynamic*** environment.

Technology Requirements

The following pages contain specific information provided by MOREnet regarding the dedicated and dial-up technology requirements as well as the fee structure that is currently in place. (**Note:** The reference to FTE is the number of full-time certified employees needed in the school district. This count does not include part-time individuals.) You may want to update this information on an annual basis.

DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

STATE PROGRAMS

TECHNOLOGY NETWORK PROJECT

1995-96 Dedicated Data Connection Participation Requirements

- A local-area network (LAN) with a minimum of 10 workstations with harddrives
- Either 386 or higher MS/DOS workstations with a minimum of 8 MB of RAM running Windows®
  or
  68030 or higher Macintosh work stations with a minimum of MB of RAM
- An Ethernet or token ring network that supports TCP/IP to the desktop
- One or two District Coordinators who will be released for training and will be able to train locally

1995-96 Dial-Up Connection Participation Requirements

- A desktop computer; a 386 or higher MS/DOS workstation with a minimum of 8 MB of RAM running Windows®
  or
  68030 or higher Macintosh work stations with a minimum of 8 MB or RAM
- A 14.4 baud, or greater, internal or external modem
- A phone line to be used for this project
- One or two District Coordinators who will be released for training and will be able to train locally

District Costs

Without DESE project funding, district costs for connectivity and support from MOREnet, exclusive of the other services listed below, would be approximately $8,000 for a one-time assessment and from $7,000 to $12,000 for annual participation fees.

With financial assistance from DESE, districts meeting the criteria for a 56 kb dedicated data connection will be required to pay a one-time assessment of $4,000 and a yearly participation fee. Each year of this three-year project, non-prorated Participation Fees will be assessed based on the district's Participation Level as of July 1 of that calendar year.

Districts moving from dial-up access to a 56kb dedicated data connection for the 1996-97 school year will, at the time of their move, be required to pay the one-time assessment and appropriate annual participation fees.

One Time Assessment

- 56kb dedicated data connection $4,000
- Dial-up access ..... No Assessment

Annual District Participation Fee

The Annual District Participation fee schedule is based on the number of full-time certified employees (FTE) in the district on July 1 and type of access. Use the chart below to determine your district's Annual Participation Fee. The following fee structure will stay in place for the three years of this project. Annual District Participation Fees for 1997-98 and beyond will be determined prior to June 30, 1997.

- 56kb dedicated data connection

  Fewer than 49 FTE $500
  50 - 99 FTE $1,000
  100 - 499 FTE $1,500
  More than 500 FTE $2,000

- Dial-up access

  Fewer than 49 FTE $250
  50 - 99 FTE $500
  100 - 499 FTE $750
  More than 500 FTE $1,000

EXAMPLES OF APPROPRIATE EQUIPMENT FOR EDUCATION TRAINING

1995-96

Networked Computers

Computer (file server)
- Pentium with 90 MHz or above
- 16 MB RAM
- SVGA monitor
- Floppy drive
- CD ROM
- Hard drive (1 gigabyte)
- Mouse (optional)

OR

Computers that are stand alone units or networked to a file server
- Pentium with 90 MHz or above
- 8 MB RAM (or above)
- SVGA monitor
- Floppy drive
- Hard Drive (500 MB or above)
- CD ROM
- Mouse

(If Windows® is a requirement, a hard drive with 8 MB RAM or above is needed for each machine.)

Printer
- Letter quality
- Laser
- Ink Jet
- Color

(If desired, printers can be connected to more than one computer by using proper switching devices.)

Computer Software
- Business graphics
- Database
- Desktop publishing
- DOS
- Windows®
- Presentation
- Spreadsheet

Software packages require site licenses for operating.

Modem (internal or external)

Telecommunications hardware and software

Computer screen projection system (for projecting data from computer screen to large classroom screen.)

Scanner (if monies are available)–hand-held or stand alone

L-shaped desks, posture chairs, and storage cabinets as monies are available (no computer furniture)

Acquiring Technology From Funding Sources

A list of Grant Information and Other Funding Sources can be found on the next two pages. The list includes monies that may be available from the Missouri Department of Elementary and Secondary Education and may be used to acquire your connection to the Internet.

For funding information available at the federal level, access the following on-line sources:

http://www.ed.gov/pubs/TeachersGuide/pt10.html/
http://www.fallingrock.com/
http://www.sqc.com/funding.html/

Suggestions for Writing Successful Grants

Regardless of the funding source you choose, the following tips may assist you in developing and writing your grant:

- Exceed the minimum requirements for information needed in the grant.
- Present clear, measurable education objectives.
- Provide a strong evaluation plan; clear, measurable educational objectives will make your evaluation plan easy to implement.
- Thoroughly check out the budget request.
- Have someone carefully proofread the final version of your grant.
- Meet all deadlines.
- Avoid unclear objectives.
- Avoid lack of details. Be sure the reader has all of the information he/she needs. The more questions a reader has about the purpose of your grant, the more likely it will not be funded.
- Avoid unreasonable dollar requests.
- If the student enrollment numbers in your classes are not sufficient for meeting the requirements for a particular grant, team up with a teacher in another program area (such as Business Education) and submit the grant together.
- Focus on what differences the grant money is going to make in your classroom instruction. Be very specific.

GRANT INFORMATION

Missouri Department of Elementary & Secondary Education
P. O. Box 480 ◆ Jefferson City, Missouri ◆ 65102

Vocational-Technical Education Enhancement Grants

Purpose:
To improve vocational education programs by aligning occupational programs with business and industry needs, with an increased emphasis on high-demand occupations.

Eligibility:
Missouri public high schools, vocational-technical schools and community colleges operating Department-approved vocational education programs.

Maximum amount of grant:
No maximum amount of individual grant funds has been established.

Local match:
The local school district must match the requested grant funds on a 50/50 or 75/25 basis.

Allowable expenditures:
Curriculum enhancement
Instructional equipment (minimum $100)
Facility improvement - restricted to 25% of the grant award

Application process:
Requests for Proposals will be sent to eligible institutions (superintendents) by January 1 each year. Applicants must develop a grant proposal and forward it to the Division of Vocational and Adult Education by March 31. Grant awardees are notified in June and the money may be expended after July 1.

Contact person:
Fred Linhardt
(573) 751-8465

A+ Schools Program Grant

Purpose:
To ensure students graduate from a challenging high school program and proceed to further education or a high-wage job. A graduate from an A+ high school may qualify for a financial incentive when attending a Missouri vocational-technical school or community college.

Eligibility:
Missouri public schools (maximum of two per district)

Maximum amount of grant: $150,000

Local match:
The local school district must provide 25% matching funds for most grant funds expended, with a 50% match for the salary for the A+ coordinator.

Allowable expenditures:
A+ Program Coordinator and related activities
A+ Schools implementation activities
Applied academic courses
Instructional equipment (minimum $100)
Facility modification
Professional development activities
Integration of academic and vocational
Consultant expenses

Application process:
This is a three-year proposal process. The grant proposal must be submitted to the Division of Vocational and Adult Education by March 31. Grant awardees are notified in June and the money may be expended after July 1.

Contact person:
Bob Robison
(573) 751-3500

Technology Grants

Purpose:
To improve technology education in Missouri public schools. There are two kinds of grants: acquisition grants and competitive grants.

Eligibility:
Missouri public school districts

***Maximum amount of grant:**
Acquisition - $2,000 +$3.50 per pupil
Competitive - $10,000-$50,000

Local match:
Acquisition - 50% match
Competitive - 10%, 20%, or 30% depending on relative student wealth

Allowable expenditures:
Acquisition - equipment, training, subscription fees, installation, maintenance, etc. (including use by administration)
Competitive - specific area of emphasis this year is to encourage and expand networking capabilities within a district

Application process:
Acquisition - submit grant proposal to Division of Instruction by October 15 each year.
Competitive - submit grant proposal to Division of Instruction by June 1 each year.

Contact person:
Deborah Sutton
(573) 751-9094

* **Amounts subject to change per legislative appropriation.**

OTHER FUNDING SOURCES AVAILABLE

Missouri Department of Elementary & Secondary Education
P. O. Box 480 ♦ Jefferson City, Missouri ♦ 65102

Tech Prep

Tech Prep is designed to assure the preparation of a high-skills workforce. It features partnerships between secondary and postsecondary academic and vocational programs working jointly with business and industry. Tech Prep integrates competency-based teaching, articulated programs, applied academics, and vocational programs into one course of study. Tech Prep grants have been issued to community colleges in Missouri. Contact your superintendent to determine how your local district may become involved.

Contact Person:
Bob Robison
(573) 751-3500

Incentive Grants

The Incentives for School Excellence (ISE) Program is intended to encourage exemplary and innovative programs designed to improve instruction. It is a state-funded competitive grant program, which was created with the Excellence in Education Act of 1985. Grants are awarded on a yearly basis and may be continued with ISE dollars up to three years. ISE grants are intended to support efforts to improve schools and teaching practices and procedures at the preschool level and in grades K-12. Applications are due on April 30.

Contact Person:
Deborah Sutton
(573) 751-9094

MOREnet/Internet Access

MOREnet is a telecommunications service sponsored by the University of Missouri and the Department of Elementary and Secondary Education that will allow schools easy access to the Internet. Continuing this fiscal year, all school districts will have dial-up access (via 800-number) to MOREnet/Internet; 150 additional school districts will have dedicated line access. The remaining school districts will have an opportunity to receive dedicated line access by 1997.

Districts will be able to designate two MOREnet coordinators that will receive training and act as the district liaison for the MOREnet. Contact your superintendent or district technology coordinator to volunteer. It is important that teachers get the MOREnet training.

Contact Person:
Susan Cole
(573) 751-3175

CAVEATS ABOUT THE INTERNET

The Internet is full of words, pictures, sounds, and movies. Most of what you will find on the Internet will be useful and harmless. However, some of the information would be confiscated if it were found in your classroom. These are the things that generate controversy among parents, teachers, and administrators. The three broad categories of controversial things that may be found on the Internet include conversations, picture, and people. Each of these categories is discussed below.

CONVERSATIONS

The Internet is primarily a tool for communication; most of the communication at this point is adult conversation. Newsgroups or discussion groups and some Inter-Relay Chats allow adults to talk about specific topics. Some of these topics are X- and R-rated. For this reason, many schools and teachers will not subscribe to any of these groups. With the advent of the World Wide Web and the development of Web home pages, many people and groups are providing access to dirty jokes, nude photo collections, and specific anti-government rhetoric. The issue of free speech comes into play here. There is considerable debate among parents, teachers, and administrators about what is appropriate for students without denying a constitutional right.

PICTURES

The ability to download sounds, pictures, and movies is relatively easy with the World Wide Web. Not all sounds, pictures, and movies are offensive. However, with the increased likelihood that students can come into contact with "dirty" pictures on the Internet, it may be worth the time and effort to block access to these materials. (In a recent development, CompuServe Inc. suspended access to more than 200 sexually explicit discussion groups on the Internet. Why? A prosecutor in Munich charged they violated German pornography laws. ["A Bad Dream Comes True in Cyberspace." *Newsweek*: January 8, 1996.]) In 1996, the United States Congress passed legislation banning so-called "indecent" material from the 'Net, with penalties ranging from a $100,00 fine to two years in jail.

PEOPLE

Many parents and teachers are concerned about the people on the other end of the Internet connection. Episodes have been reported in which students have been followed and/or harassed over the Internet after meeting someone in an electronic forum. These instances are rare, considering the number of electronic exchanges that occur every day. However, you will want to know what precautions to take if this should occur:

- **Remember that communication over the Internet is not private or secure.** Consider the Internet as a postcard, not a letter.

- **Never give out a personal address or telephone number** in an open forum or discussion group. If your students wish to communicate, they should give the school's address.
- **Never accept an invitation to a secret face-to-face meeting or give out personal information** that may create an unsafe situation.
- **If you or a student are harassed by electronic mail (either with obscene or threatening messages)**, get the e-mail address of the person and write to the Internet service provider. The address of the Internet service provider is usually ***postmaster@*** the host computer. For instance, if you wanted to complain about someone whose e-mail address is ***chris@dne.org***, you'd write to *postmaster@dne.org*.
- **Never assume on-line users are who they say they are.** The anonymity of the 'Net allows some users to disguise themselves in fictional personas.

How You Can Make the Internet Safe

Some companies are offering software programs that will restrict access to the Internet. Among these are:

SurfWatch Software
http://www.surfwatch.com/

Scantron Computers
http://www.qualitycomp.com/

Internet-in-a-Box for Kids
http://www.gnn.com/gnn/bus/ibox/

CompuServe, America Online, and Prodigy offer "parental control" services with their memberships.

There are also groups on the Internet dedicated to making the Internet safe for kids. Visit:

SafeSurf
http://www.safesurf.com/index.html/

Children Accessing Controversial Information (CACI)
http://www.zen.org/~brendan/caci.html/

Child/Kid Safety on the Information Highway
http://www.isa.net/isa/empower/child.html/
http://www.uoknor.edu/oupd/kidsafe/start.html/
http://www.voicenet.com/~cranmer/censorship.html/
http://www.4j.lane.edu/InternetResources/Safety/Safety.html/

Classroom Connect (Wentworth Worldwide Media, Inc.)
e-mail to: info@classroom.net
In the body of the message, type: send childsafety

Above all, have fun! It is worthwhile to provide your students access to the Internet. It is a tool that will become increasingly more important in every job they will have.

SUGGESTIONS FOR MAKING THE INTERNET SAFE FOR YOU AND YOUR STUDENTS

- If you are planning to let your students use the Internet in the classroom, you may want to **talk to your school's technology specialist** to find out what precautions have been taken and what access the students will have.
- Before you begin using the Internet in your classroom, you may want to send a letter home to your students' parents. Be aware that Internet use is a hot issue; many parents may not have any understanding of the Internet beyond the stories they have seen or heard on TV.
- Set up clear guidelines for what your students can do and cannot do on the Internet. Many schools adopt ***Acceptable Use Policies*** (AUPs) that clearly outline responsible behavior on the Internet. An AUP is a contract signed by teachers, parents, and students that sets the rules for Internet use in schools. Examples of Acceptable Use Policies are included in this handbook. **Post the Acceptable Use Policy** close to the computers.

  There are experts who say that an Acceptable Use Policy is not worth the paper it is written on. However, much like classroom rules and policies, it is better to have an AUP than not to have one.

DRIVING WITH A LICENSE

Before students merge onto the information superhighway, certain "rules of the road" (the ***netiquette***) must be understood by the students and their parents. The one fear generated by the Internet is the access to inappropriate material. It is the responsibility of the school district and the teacher to inform parents and students about what are acceptable and unacceptable uses of the Internet.

Acceptable Use Policies (AUPs) are common instruments or contracts used by school districts to protect the district and to inform parents and students of the expectations and limitations of Internet use. AUPs outline terms and conditions of Internet use. They also establish correct Internet behavior, define access privileges, and outline consequences of misuse. Check with your technology coordinator to see if your school district has an AUP. If there is no standard AUP set up for your district, establish one.

ESTABLISH A DRIVER'S LICENSE

AUPs are for educating students and parents on how the district perceives its use of the Internet. Open communication between parents, students, and teachers should be stressed with Internet use. Looking at other school districts' AUPs can help you in establishing your own AUP. There are examples included in this Guide. You also may access examples on the World Wide Web at these addresses:

The Internet Advocate
http://silver.ucs.indiana.edu/~lchampel/netadv.html/

Acceptable Use Policies
http://www.rice.edu/armadillo/acceptable.html/

AskERIC Gopher
gopher://ericir.syr.edu:70/11/Guides/Agreements/

In creating an AUP for your district, you will need to address several issues.

1. The policy should explain what the Internet is and how students and teachers will be accessing it. Be clear about the uses of the Internet within the classroom. Emphasize that this use is for educational purposes. Inform parents of potential risks and consequences of accessing inappropriate material in the classroom.

2. Clearly state that the use of the Internet is a ***privilege***, not a right. This privilege can be revoked. Clearly outline the penalties of violating the AUP. Explain what is defined as illegal. Aiso, discuss security issues of the Internet.

3. Attach the netiquette rules to the Acceptable Use Policy.

4. Have all the parties involved sign the policy statement. There should be a place on the document for students, parents, and teachers to sign with a statement saying that the contents of the AUP have been read and understood. Parents should be aware that their child could potentially access inappropriate material and they will accept the responsibility for the action of the child and the consequences of the action. Teachers should sign as an agent of the school district. Post the policy and the netiquette rules in the classroom by the computers where they can by seen at all times by students and other users of the Internet.

For the protection of the school district and the reassurance of parents, you must implement the AUP. Anyone using a school's Internet connection must read and sign the agreement. This policy must be strictly enforced.

Examples of Acceptable Use Polices follow. Netiquette is covered in the section, "Preparing Students to Go On-Line."

STUDENT CONTRACT FOR A+ COMPUTER LAB

I, _____agree to adhere to the following guidelines when using the A+ Computer Lab at Logan-Rogersville High School.

1. I will only use the computer lab for purposes intended, and will not add or delete programs from the hard drive while in the computer lab. While using the Internet, I will not access controversial materials. If I do commit the previously mentioned acts of abuse, I relinquish all privileges in the computer lab for the remainder of the current school year.

2. I will follow ***all*** guidelines in the computer lab and realize ***all*** liability for the computers and associated items such as disks and books, etc. My parents and myself realize all liability associated if the computer or other items necessary for its operation are lost, stolen, and/or damaged due to abuse, neglect, etc. while I am in the computer lab. If damage does occur, the school maintains the right to withhold all student records until reimbursement has been made.

3. I assume all liability for damages and repair due to my abuse, accident, or neglect of the equipment in the lab and will relinquish all rights to the computer lab.

_____ _____

Student Signature Date

Year of Graduation _____

I recognize it is impossible for LRHS to restrict access to all controversial materials and I will not hold the school responsible for materials acquired on the network.

_____ _____

Parent Signature Date

_____ _____

Teacher Signature Date

THE DESE CONNECT PROJECT

ACCEPTABLE USE POLICY

The purpose of the CONNECT project is to be a catalyst and foundation for the development, maintenance, and use of information sharing in the State of Missouri.

CONNECT Project Goal

The goal of the CONNECT project is to promote innovation and educational excellence in Missouri. To achieve this, CONNECT must provide quality, equitable, and cost-effective information and communication resources to MOREnet (Missouri Research and Education Network), MoDESE (Missouri Department of Elementary and Secondary Education, the State Library, and the Office of Administration. CONNECT is part of the overall goal of the State of Missouri as stated by Governor Carnahan in 1994, ". . . to develop a comprehensive communications network of elementary and secondary education, higher education, public libraries, and finally state government agencies."

CONNECT Use

All use of CONNECT shall be consonant with the purpose and goal of CONNECT and the State of Missouri communications network. Successful operation of CONNECT requires that its users regard CONNECT as a shared resource, and cooperate to form a community of diverse interests with the common purpose of advancing education in Missouri. Therefore, it is imperative that members conduct themselves in a responsible, ethical, and polite manner while using the network.

The intent of the CONNECT acceptable use policy is to ensure that all uses of CONNECT are consistent with the purposes of MOREnet, MoDESE, the State Library, and the Office of Administration. The policy does not attempt to articulate all required or proscribed behavior by its members. CONNECT is an open network in both implementation and spirit. Technical measures could have been invoked to constrain network use, but they would have limited the utility of the network. Rather, in any specific situation, each individual's judgement of appropriate conduct is relied upon. To assist in such judgement, the following general guidelines are offered:

I. All uses of CONNECT must be in support of education, research, public service and government in Missouri and consistent with the purposes of MoDESE, the State Library and the Office of Administration.

II. CONNECT accounts will be used only by the authorized individual owner of the account.

III. All CONNECT electronic discussion groups and conferences will be moderated.

IV. No use of CONNECT shall serve to disrupt the use of the network by other users.

V. Any use of CONNECT for illegal purposes, or in support of illegal activities, is prohibited.

VI. Any use of CONNECT for commercial purposes is prohibited.

VII. Any use of CONNECT for product advertisement or political lobbying is prohibited.

VIII. All communications and information accessible via CONNECT should be assumed to be private property.

IX. Any CONNECT user's traffic that traverses another network may be subject to that network's acceptable use policy.

X. From time to time, MOREnet, MoDESE, and the State Library, and the Office of Administration will make decisions on whether specific uses of CONNECT are consistent with this policy.

PRACTICE . . . PRACTICE . . . PRACTICE
GETTING READY TO TEACH WITH THE INTERNET

In order to make you feel comfortable with the Internet before teaching your students to use it, this section includes exercises that introduce you–the teacher–to the Internet, its electronic tools, and sources of information and ideas. This section is provided in worksheet format for ready reference.

1. Who is the ***technology coordinator*** in your district or school building? Write down his/her name, telephone number, and e-mail address.

   _____

2. Obtain your ***e-mail address*** from your technology specialist on your campus.

   E-mail address and password: _____
   (Do **not** share your password with anyone; in fact, you may want to code your password here. Also, you will want to train your students not to share their passwords.)

3. ***E-mail access***. Find out what software package is available for sending and receiving e-mail messages. Practice accessing the software through your computer connection. The easiest way to get started is to find out someone else's e-mail address on your campus and send a practice message. This exercise will give you access to the appropriate screens to type in an address, to put in the recipient's name, to assign a subject to the message, to key in the message, and to use the appropriate commands to send the message. To read the response that the person sends back to you, you will access the software again, key in the appropriate command to see a list of your mail, give the proper command to receive the mail, read the mail, and delete it or key and send a response.

   Software: _____

   Steps to access your e-mail software:

   _____

   _____

   _____

   _____

   _____

Send an e-mail message to someone on your campus. The e-mail address is:

_____

Steps to access the messages in your e-mailbox:

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4. ***Subscribe to a listserv or computer discussion group.*** Here's how you might subscribe to a group called NOVAEGROUP: Teachers Networking for the Future:

   a. Send e-mail to the computer that is "hosting" the discussion group. E-mail to: ***listserv@idbsu.idbsu.edu*** (for NOVAE discussion group).
   b. Leave the subject line blank.
   c. In the body of the message, type: ***subscribe NOVAE*** **(listname) (your name)**
   d. Send the message using the commands of your e-mail system.
   e. When your message is received, you will get a response from the moderator of the discussion group, along with instructions that you should keep about how to use the discussion group and how to unsubscribe from the group.

The current and back issues of the NOVAE materials are archived and can be accessed on the Web at:
http://prism.k12.nj.us/WWW/OII/disc-pub/novae-group/index.html/

Hint: Don't send the subscription message to the group address; it will get distributed to all subscribers, which can be very embarrassing. When responding to someone in the listserv, always respond to the person individually; that is, write down his/her e-mail address and send a separate message. Do not use your "reply" key to respond to the individual. Again, the message will go to the entire list. You will be embarrassed by the experienced users.

To unsubscribe:

   a. E-mail to the listserv address.
   b. Leave the subject line blank.
   c. In the message area, type: ***unsubscribe NOVAE***
   d. Send message (or use the instructions that were sent to you by the listserv or discussion group manager).

Find a listserv of your own. Try these addresses for a directory of lists:
ftp://rtfm.mit.edu/pub/usenet/news.answers/mail/mailing-lists/
http://prism.prs.k12.nj.us/WWW/OII/disc-pub/novae-group/0105.html/

Write the address(es) of the discussion group or listserv you have joined below:

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After you have subscribed to a mailing list or listserv, you will receive messages on a daily basis or once a week in the form of a digest. (An additional list of discussion group sites may be found in the " Internet Resources" section.)

5. If someone on your campus uses the ***CU-SeeMe*** software, ask him/her if you and your students may sit in the next time it is used. Better yet, team up with the teacher so that all of the students can participate together. Make a note below of your own ideas for using the software after you have seen the demonstration:

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6. ***Get comfortable with Telnet.*** To use Telnet in a Windows® environment, connect to the Internet and follow these steps:

   a. Click on the Telnet icon to open the connection.
   b. After the beginning advertisement has cleared the screen, move your cursor to the dialog box.
   c. Type: *open* (in lowercase letters) and the address you want, for example:
      open ds.internic.net
   d. A menu will appear that tells you the login to use to access the system, how to erase mistyped information, and how to exit. Telnet is case sensitive. Key in the login request exactly as displayed.

Libraries are best accessed through Telnet, and there are many on the 'Net. Here are some Telnet sites for you to access. Make a note of the quality and/or uses of the site for you and your students:

University of Michigan Weather Underground
telnet://dlab.sprl.umich.edu/

University of California Library System
telnet://lvyl.ucop.edu/

Federal Government Bulletin Boards and General Information
telnet://fedworld.gov/

Educational Projects
telnet://k12.ucs.umass.edu/
(Log in: guest)

Economics Database
telnet://netec.mcc.ac.uk/
(Log in: netec. Password: netec)

7. To transfer files using ***FTP***, you have to connect your computer to another. To connect using FTP means that you are actually accessing data stored on a remote computer. You will connect with the other computer's Internet service. Some computer administrators have set aside areas on their machines and allow you, the visitor, to access these areas. Accessing another computer when you do not have an account there is called ***accessing anonymously***. You may hear the term, ***anonymous FTP***. In the case of anonymous FTP, your log in name should be ***anonymous***.

   When you use FTP, please be cautious. Computer administrators are allowing you the privilege of connecting to their computers. If people log in from 8:00 a.m. to 6:00 p.m. during the major usage times, these sites may be (and some have been!) closed to anonymous users. Try to use anonymous FTP before 8:00 a.m. and after 7:00 p.m. their time. If this is not possible, be quick; get all the information you need and get out of their computer. The quote for FTPers is: "FTP is a privilege, not a right. Don't abuse it!"

   Test out this site at the University of Western Ontario. Type the commands and press the <ENTER> key after each line to send the command:

   a. At the command line "host (ftp) address," type: ***hydra.uwo.ca***
      This address will take you the computer in Ontario.
   b. At the "log in" line, type: ***anonymous***
   c. When you are asked to enter a password, type in the temporary e-mail address you are using right now.
   d. To view the site's main directory, type: ***dir***
   e. To view the libsoft directory, type: ***cd libsoft***
   f. To see the items in the libsoft directory, type: ***dir***
   g. To retrieve an item in the directory, type: ***get*** **(name of item)**
      Make sure to type the name of the item ***exactly*** as it appears in the directory; it is case sensitive.
   h. When you wish to disconnect your commuter, type in the command ***quit***

   NOTE: To break the connection at any time, type: ^] (press and hold the "Control" key and type a right bracket).

   Evaluate its usefulness for you and your students:

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Other FTP sites:

Bureau of Labor Statistics (publications/documents)
ftp://ftp.bls.gov/

Government Publications/Political Science/US Budget/Speeches, etc.
ftp://ftp.whitehouse.gov/

8. ***Using Gopher.*** Access Gopher through the connection provided by the Internet service (either by an icon or through a numbered menu) or simply type: ***gopher*** at the command prompt. Here are some worthwhile Gopher sites to access and evaluate:

Using Telnet:

telnet://gopher.uiuc.edu/
(log in as: gopher)

Using Gopher:

Chronicle of Higher Education
gopher://chronicle.merit.edu/

FinanceNet
gopher://pula.financenet.gov/

Business Resources
gopher://refmac.kent.edu/
gopher://gopher.nijenrode.nl/

K-12 Learning Resources
gopher://gopher.pbs.org/

Missouri Department of Elementary and Secondary Education (DESE)
gopher://services.dese.state.mo.us/

9. ***Sites on the World Wide Web.*** Use the bookmark feature of your Web browser to return easily to your favorite Web sites. (To access the Bookmark feature, select ***Bookmark*** on the menu bar, then the submenu item ***Add Bookmark***. This action will add the address in the Location line to a customized list of addresses. When you want to return to the address, simply access your list and select the site's name.) Evaluate the usefulness of each of the following sites:

American Marketing Association
http://www.ama.org/

Advertising Law Internet Site
http://www.webcom.com/

Educational Technology
http://edtech.fwl.org/

The Institute for the Learning Sciences
http://www.ils.nwu.edu/

AskERIC HomePage–a great source
http://ericir.syr.edu/

White House
http://www.whitehouse.gov/

Homes & Open Houses–house hunting on-line
http://openhouses.com/

Career Advice
http://www.occ.com/occ/

Career Mosaic
http://www.careermosaic.com/

Wentworth Worldwide Media's Archive
http://www.classroom.net/

U.S. News Online
http://www.usnews.com/

10. To get to an ***Archie*** site, you need to access Telnet. To use Archie in a Windows® environment, follow these steps:

    a. Click on the Telnet icon to open the connection.
    b. At the *host*> prompt, type: ***archie Nebraska*** (the site nearest to Missouri)
    c. At the *login*> prompt, type: ***archie***
    d. At the *unl-archie*> prompt, type the keywords that relate to the information you want to find.

    It may be helpful to key in ***help*** at the *unl-archie*> prompt and print out the commands that will assist you gain access to the archives in Archie. A sample of Archie servers for the United States:

If you live in or near:	**Use:**
USA (NE)	***archie.unl.edu***
USA (NJ)	***archie.internic.net***
USA (NJ)	***archie.rutgers.edu***
USA (NY)	***archie.ans.net***
USA (MD)	***archie.sura.net***

11. Let's perform a ***Veronica*** search

a. Access the address:
   gopher://veronica.scs.unr.edu:70/
b. Select the line "Search ALL of Gopher space (5000+ gophers) using Veronica"
c. Your screen will list a number of Veronica searching options. Select the type of search you would like to conduct, such as "Find GOPHER DIRECTORIES by Title word(s)."
d. Type a word such as ***education, marketing,*** or ***entrepreneurship*** in the "Enter search keywords" box and hit the <enter> key.
e. Scroll through the titles found and select one that interests you.

Make a note of the useful sites.

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12. On your own, work through the "Basic Employment Unit" and adapt it for use in your classroom. (The Basic Employment Unit is located at the end of the "Lesson Plans" section.) As you work through the unit, make note of the sites or topics you find particularly useful as you prepare your students for employment. Add these sites to your Internet Resource Log included at the end of this section.

13. Consider setting up an ***electronic bulletin board*** for your classroom. For information about bulletin boards, visit:
   http://www.naples.net/remote/zrbbs.htm/

Some suggested topics for a classroom bulletin board include:

- Start a story* and have your students add to it. Publish the results in the school newspaper.
  * Start a story about Champ the Great with the sentence "One sunny, autumn afternoon, Jenny Moore took her dog Champ for a walk."
- Describe an item and have your students guess what it is.
- Discuss current issues in the school, town, state, or country.
- Put in hints that you have not shared in class on how to complete classroom assignments.
- Create a message to send to another school in your state or in another state or country.

14. ***WAIS*** provides a user-friendly interface to read newspapers, get information on any country in the world, scan many specialized databases, and obtain information about the Internet. It is particularly

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suited for retrieving textual information. To try WAIS, Telnet to ***telnet://quake.think.com*** and log in as ***WAIS***. Evaluate what you find below.

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15. Visit the other Gopher, Telnet, and FTP sites listed below.

GOPHER SITES

Purdue's on-line writing lab (OWL)
gopher://owl.trc.purdue.edu

University of Missouri-St. Louis Library
gopher://umslvma.umsl.edu

Customer services resources (a fee is charged for use)
gopher://johnnymac.harvard.edu

TELNET SITES

telnet://ds.internic.net/
(login: guest)

telnet://archie.unl.edu/
(login: archie password: your user id)

telnet://stis.nsf.gov/
(login: public)

telnet://bigsky.bigsky.dillon.mt.us/
(login: bbs or hrn)

FTP SITES

ftp://tcet.unt.edu/pub/

ftp://ftp.wentworth.com/wentworth/classroom

ftp://mrcnext.cso.uiuc.edu/pub/etext/etext94

ftp://whitehouse.gov/pub

Putting Your Philosophy First

The Internet has the potential to become a dynamic teaching tool; however, it is important first to establish what you hope your students will accomplish through its use. The learning goals you set and the learning experiences you design are tied to your teaching philosophy and your approach to teaching. You know best how the use of the Internet will support the marketing curriculum. A thoughtful, well-designed approach to how the Internet can support your teaching style and philosophy will make the difference in planning the Internet experiences for your students and will have an impact on their learning.

The next sections of this Guide include information on how to prepare students to go on-line, as well as lesson and unit plans for using the Internet with the Fundamentals of Marketing and Advanced Marketing curricula. It is important to note that the Internet is changing daily, and access to the information on the Internet is also getting easier.

Make this Guide your own: Write in the notes column. Change the order of the content. Add to it. Share it with your colleagues. Dog-ear the pages.

Now, let's get surfin'–tide's up!

INTERNET RESOURCE LOG

NAME OF SITE/PERSON	INTERNET ADDRESS
Occupational Handbook	*http://www.espan.com/*
Career Mosaic	*http://www.careermosaic.com/*
Internet's Online Career Center	*http://www.occ.com/occ/*

INTERNET RESOURCE LOG

NAME OF SITE/PERSON	INTERNET ADDRESS

NOTES TO THE DRIVING INSTRUCTOR

This portion of the handbook focuses on preparing the driver (the student) to maneuver on the information superhighway. It is written to the student as preparation for on-line contact. (The "Driver's Education," "Accessing the 'Net: Motoring on the Information Superhighway," and the "Driving Test" sections are designed as handouts for the student.) Specifically, this portion deals with the "rules of the road" for accessing and using the Internet productively and responsibly. Much of the information in this section is covered to some extent in the section, "Preparing Teachers to Go On-Line."

The purpose of this driving manual is to give the student driver some guidance in preparing for Internet driving and to provide knowledge on what to expect while on the superhighway. It is suggested that you be very specific about where your students cruise the 'Net in the beginning. In this way, you can manage some control and see how responsibly students will handle this privilege.

At the end of this section is a two part "driving test." The first part of the test is a written examination dealing with e-mail and discussion lists. The second part of the test is a skills test, focusing on using the treasure hunt format to locate information on the Internet. An alternate driving test may be accessed at the following site:

Tutorial for Internet Driver's License
http://www.infolane.com/nm-library/itblcon.html/

How you present this information is strictly up to you. The contents of this section may provide the outline for a single lesson plan or you may want to introduce parts of the content over time. It is your material and should be updated as new technology, new capabilities, and new locations on the 'Net emerge.

MAKE THE CHOICE TO USE THE INTERNET WELL

If you are considering adding the Internet to your teaching toolkit but are concerned about how you can incorporate it into your curriculum, here are some questions you may want to consider:

- Will the Internet enhance your curriculum?
- What outcomes are you seeking for your students by using the Internet?
- How can you use the Internet in your classroom to assist students to manipulate information, process it, and refine it into a useful format?
- How will using the Internet affect student learning?
  - Will the Internet help the students answer the question or solve the problem?
  - Will using the Internet help motivate students to find the answer to the question or problem?

- How will they reflect on the information they have gathered to solve the problem or answer the question?

If the answer to these questions is that student learning can be enhanced by using the Internet in your classroom, then you are ready to prepare students to go on-line.

If you're worried about your own ability to teach the Internet in the classroom, there are ways to ease these fears. Teachers have to learn how to incorporate new tools and technologies into their professions. Those teachers who use the Internet successfully in their classrooms as an information/teaching tool

- think of the Internet as one of many tools at their disposal;
- explore the Internet broadly and are not distracted by the bells and whistles;
- seek input from knowledgeable colleagues;
- have reliable (albeit limited) access to technical support;
- are supported by school administrators;
- involve their students in the creation of the work they do on the Internet;
- allow and encourage students to teach them about new things on the Internet–i.e., are not afraid to be learners in front of their students; and
- are not afraid to try new things.

Incorporating these suggestions into your teaching style should help minimize the Internet's intimidation factor.

Make the Choice to Teach the Internet Well

The following section focuses on a suggested approach for preparing your students to access the dynamic environment of the Internet both ***intelligently*** and ***responsibly***.

- **Try to make your students' first experiences with the Internet successful and productive.** To keep your students from getting disoriented and frustrated, visit the Internet sites prior to using them in your classroom then guide students toward these sites by teaching your students how to open a specific URL. Random or undisciplined surfing of the Internet may be of questionable value and does little to encourage efficient and purposeful location of relevant information. For these reasons, consider fairly structured activities at first.

  When your students feel more comfortable with the Internet, have them visit "resource sites," which will guide your students to other sites through pre-defined links. Using resource sites will give your students a structured method of learning the types of information available on the Internet. Two "resource sites" are:

  Route 6-16
  http://www.microsys.com/616/

  Cybertown
  http://www.cybertown.com/

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Once your students have navigated the Internet using a resource site, allow them to conduct Internet searches using a search engine.

- **Help your students become competent in specific Internet skills.** These skills must include:
  - Knowing and following the posted "rules of the road" (the netiquette);
  - Adhering to the posted Acceptable Use Policy (AUP);
  - Knowing how and when to use passwords (if needed);
  - Knowing the security features of the Internet;
  - Knowing and accepting the consequences of abusing the privilege of using the Internet;
  - Knowing how to access the Internet from your classroom; and
  - Knowing how to manage a number of applications that are open and taking up the machine's memory. (If you are unfamiliar with or uncomfortable about working with Windows,® you may need to take a short course in managing this computer environment or consider buying a commercial book, such as *Windows for Dummies*. This book is ***not*** insulting.)

Many of these skills were covered earlier; however, the netiquette, passwords, and security issues are covered in the next sections.

- **Keep a balance between the Internet and other resources** in the classroom. The Internet is not a be-all, end-all. Do not let students belittle using more traditional resources that may be superior in quality and quantity. And don't forget: people are the most important resource in marketing.

- **Teach students to evaluate critically the information they find on the Internet.** Is it reliable? Is it biased in any way? Is it accurate? Is it useful? Find a few reliable, specific sites that will support the educational needs of your students and the curriculum. The Internet (even though it is full of information) is not an encyclopedia. It is critical that students obtain the ability to evaluate information gathered from it. Students need to learn to be critical consumers and thoughtful users of the information gathered from the 'Net. Changes are occurring daily; sites come and go, and some World Wide Web search engines may not be as stable as other more reliable sources of information.

- **The Internet serves best as a tool for communication.** Start with e-mail connections with your colleagues and have students do the same. This activity means that you will have to find a teacher who is willing for his/her students to share e-mail with you and your students.

- **Plan for and provide time for using the Internet.** After you feel comfortable with letting students go on-line, give them time for exploration. You can't do everything in 40-50 minutes.

- **Put students in small groups,** and rotate the groups. Groups are especially effective if you do not have a computer for every student in your classroom.

- **Let students do some of the teaching**. Each student will learn different things about the Internet. Let your students share the things they've learned with you and their classmates.

  There is usually more than one location (U-R-L) for a topic, such as resumes, job listings, etc. Divide the students into groups and assign each group a specific U-R-L. Ask each group to share the information they find. This kind of exercise lets students teach their peers and prevents the problem of all students trying to access the same U-R-L at the same time.

- **Develop and share your own short list of bookmarks** with your students. Expect them to do the same by providing each student with a copy of the Internet Resource Log that follows the driving tests.

Teaching students to be responsible, informed, careful, and reflective users of the Internet will make the experience for you and them enjoyable and fun. After all, that's what learning is all about!

RULES OF THE ROAD: NETIQUETTE

Before you merge onto the information superhighway, you must be aware of certain "rules of the road." The Internet is not only a collection of information but also a collection of people. When driving on the Internet, you need to observe the Internet's basic etiquette. The term for these rules of the Internet road is ***netiquette***.

Netiquette is more than being polite. As Howard Rheingold says on his Web site, "Netiquette is like the double yellow line in the middle of a highway" (***http://www.well.com/user/hlr/tomorrow/webconf.html/***). It is an agreement that allows large numbers of people to interact with information and other people with minimum confusion, aggravation, and damage. Because the Internet is growing at such an accelerated pace, it is imperative that drivers on the information superhighway follow the road rules.

WHAT ARE THE RULES?

Virginia Shea developed core rules of netiquette in her book *Netiquette* (1994), published by Albion Books. These core rules are a basis for developing good netiquette. Review the netiquette rules that accompany the Acceptable Use Policy to insure that you are aware of the behavior expected on the Internet. The rules of the road follow:

Rule 1: Remember the human.

The Golden Rule should not be forgotten on the Internet: Do unto others as you'd have them do unto you. Even though talking to a computer screen is very impersonal, remember that you are exchanging information with other people. Express yourself freely, but remember that these are humans with feelings and opinions. A good rule of thumb for conversing on the Internet is to ask yourself, "Would I say that to the person's face?"

Another consideration for thinking about what you write for cyberspace is that your words may become permanent. When you send an e-mail message or reply to a discussion group or individual, you lose control of where that message goes, who reads it, and what is contained in the message. Inappropriate messages may come back to haunt you. Systems are backed up and messages can be stored, not just printed.

Rule 2: Adhere to the same standards of behavior on-line that you follow in real life.

Ethical behavior should not disappear when you enter cyberspace. Just because you feel that you are a nameless person on the Internet does not give you the right to be unlawful and/or unethical. The code of conduct expected of you in real life is expected on the Internet. This conduct is a common courtesy. Anything unlawful is bad netiquette as well as a violation of the AUP.

Rule 3: Know where you are in cyberspace.

Just as there are different speed limits and rules on the roads through different towns, there are different rules in different Internet sites. Be aware of where you are and the rules for that area of cyberspace. Netiquette varies from domain to domain. What may be acceptable in one area may be considered rude in another.

A good rule of thumb is "Lurk before you leap." To *lurk* means to take your time to understand who is contributing to the newsgroup or listserv before you participate. When entering a new domain for the first time, take the time to read what is being said, observe the format in which it is being said, then take part in the action.

Rule 4: Respect other people's time and bandwidth.

Time is valuable. Make sure that what you say is of value. Gossip may be acceptable in one domain and not in another. There is nothing more frustrating or time-consuming than reading useless messages and having to delete them from your mailbox.

The ***bandwidth*** refers to the capacity of the wires to carry data, text, graphics, and sound at the same time. There is a limit to the amount of information that can be transmitted at any one time. There is also limited amount of space on the host computer for storage. Repetition in a discussion group ties up the host computer's storage space.

This rule is especially important for people involved in discussion groups. Make sure that what you present to the discussion group is relevant and useful. Think twice before hitting the <Send> or <Reply> key.

Rule 5: Make yourself look good on-line.

There is an advantage to anonymity on-line. You are not judged by how you look nor where you're from but by what you know and how you present this knowledge. Taking the time to check your grammar and spelling will help you present yourself well. Make your messages neat and correct.

When you are communicating through the Internet, be sure that you know what you are talking about and that it makes sense. Be sure that there are no phrases that may cause confusion. If you have extensive knowledge about a topic, share that knowledge in understandable language. Just be sure the information is accurate.

Rule 6: Share expert knowledge.

When you have something to say and it is worth saying, speak out and be heard! The strength of the information superhighway is that there are intelligent conversations being held and a wealth of information being exchanged. Allow yourself to be a part of the intellectual flow. Share your opinions. You will find that others share your opinions and ideas and a common link is established.

Rule 7: Help keep flame wars under control.

Flaming is the term applied when someone writes a message in ALL CAPS. Generally, the person doing the flaming is considered to have strong opinions. Many times flaming is used as a reprimand for improper Internet use or improper netiquette. Flaming is a tradition on the Internet. Flaming has an intended purpose and can be very effective in controlling netiquette. Only flame when you intend to–take that CAPS LOCK key off.

Flame wars between individuals should be avoided. These wars can destroy a good discussion and dominate the Internet time, which monopolizes, misuses, and wastes bandwidth.

Rule 8: Respect other people's privacy.

Do not go through other people's e-mail. Ethical behavior would not allow you to go through another person's drawers or files in his/her desk. The same principle applies to e-mail messages. They are private domain. Treat them with respect, just as you would want your messages treated.

Rule 9: Don't abuse your power.

Over time and continued use, you will become more knowledgeable about a topic or action of the Internet. Undoubtedly, you will come across a user who is less knowledgeable about cyberspace than you. Be considerate and patient. Do not take advantage of your knowledge or the naivete of a user. Remember that you were once a beginner. Try to encourage and help a novice user.

Rule 10 Be forgiving of other people's mistakes.

When you do come across a violation of netiquette, remember that the mistake was made by a person. This person may have made the mistake due to ignorance. Before you correct the person's mistake by flaming, try to determine if the mistake was made intentionally. A simple, polite e-mail message may be all that is needed to correct the error. Flaming may not be the way to correct the person's netiquette violation.

References on the Internet for Netiquette

There are good references for netiquette on the Internet. One of the best places is called *Dear Emily Postnews*. This site allows the operator to ask netiquette questions and read frequently asked questions (FAQs). Netiquette rules also can be found by performing a search through a search engine using the term "netiquette."

Dear Emily Postnews
http://www.clari.net/brad/emily.html/

Abbreviations and Emoticons

In addition to netiquette, there are some standard abbreviations and emoticons. ***Emoticons*** use characters, letters, and numbers to portray an emotion, object, or action. The major type of emoticon is called a ***smiley***. A ***smiley*** is a smiley face

that appears in text by using characters. The most standard smiley (a grin) is created by typing a colon, a hyphen, and an end parenthesis, i.e., :-). For a list of standard abbreviations and emoticons, visit the following sites:

PolitenessMan's Emoticon Guide
http://www.organic.com/1800collect/Emoticons/

The Lexicon of Smiley Emoticons
http://www.bigeasy.com/~pbreslin/smiley.html/

Passwords: the Key to the Information Superhighway

The key to the vehicle you will use to travel the information superhighway is your password. If you have no password, you have no access. Usually you are issued a user identification number and a password to enter into a network. In this way, the password becomes your private "key" for entering the network.

Choosing a unique password is a serious matter. Do not choose the obvious words or numbers associated with you, such as your birthday, dog's name, or Saturday night date's name. A good rule of thumb is to mix numbers and characters together for a password such as ***8redr3***. Remember to make it a habit to change your password on a regular basis. Many computer network managers ask you to change your password on a periodic basis.

One important rule to remember is: ***Never give your password to anyone!*** If you think that someone has "lifted" your password, change it immediately. This precaution will protect your privacy as well as protect the integrity of the system.

Security

When driving down the highway, the operator of the car always must look and adjust for suspicious actions or obstacles in the road. This same action and reaction must be used on the information superhighway. There are several concepts to consider when protecting yourself and/or your hardware and software when cruising on the 'Net. Defensive driving on the information superhighway will be the first line of protection.

Do not think that you are totally anonymous on the Internet. When engaging in discussions with other users, you will tend to give personal information. You must realize that releasing this type of information has the potential to harm you. Do ***not*** give personal information over the Internet. The person with whom you are chatting may be harmless; however, there are others who can "hack" into others' e-mail accounts. You cannot control who sees any message, but you can control the information you share. Stalking has happened through the Internet, although it has been rare. Don't let it happen to you!

Downloading files from the Internet also exposes you to potential problems. When you receive files or information from the Internet through FTPs, you run the risk of obtaining a computer virus. There are many kinds of viruses that come with all sorts of ways to infect your computer's hardware and software,

which may cause serious problems. Your teacher will probably have an anti-virus program already installed on your classroom computers. One important point to remember is that if you download an infected file onto a disk and take that disk home, you run the risk of infecting your home computer or any computer that disk comes in contact with. Conversely, if you bring a disk from home with an infected file, you have the potential of infecting the school's computers. Always let the virus-checking program check your disk before using it on your or the school's computer.

ACCESSING THE 'NET:
MOTORING ON THE INFORMATION SUPERHIGHWAY

MERGING ONTO THE HIGHWAY

Accessing the Internet will vary, depending on the vehicle (computer) you are driving, the point of location (whether school or home) where you enter, and the on-ramp (modem, etc.) you use to enter the superhighway. When merging onto the information superhighway at school, your driving instructor (your teacher) will instruct you with the commands or directions to take to get to the "main highway." If you are at home, you may have a commercial package, such as Prodigy, America Online, or CompuServe, on your computer that allows you access to the Internet. With commercial services, there may be a charge for each use of the Internet and/or long distance use. Be sure that your parents are aware of the restrictions with home packages and of the charges that may be assessed by the providers.

WHAT IS THE ADDRESS?

Just as each point of interest has an address along any street, each document or page on the Internet has its own address. Just as your own home is identified by specific numbers and letters, street names, town, and state, each document or page on the Internet has a unique identifier called a Uniform Resource Locator or URL (pronounced "earl" or "U-R-L"). An example of an URL is

http://www.usps.gov/ncsc/lookups/lookup_zip+4.html/

This address will take you to the U.S. Postal Service's zip code page. Broken down, the components of the URL are as follows:

http://	hypertext transfer protocol (the handshaking between computers)
www.	World Wide Web designation (some URL's do not use www)
usps.gov/	who owns the address
ncsc./lookups	links to the specific page
lookup_zip+4	the name of the specific page
.html	hypertext markup language: the language used to create the page

Sometimes part of the name of the specific page is in ALL CAPS. URLs are case-sensitive, which means that upper- and lower-case matters. When you are typing an URL, be sure that you type it exactly as it is written.

If you know a specific address and you want to go directly to the page or document, you can go right to the address. The method of accessing a specific

URL may vary with the different browsers (Netscape is a Web browser). Allow your driving instructor to show you the appropriate way to go directly to a URL.

Because Web pages are constantly being updated, their addresses may change as well. If you type in an address and you receive a message that states that your server is unable to locate the URL, you may want to try typing in only the main address. For instance, the U. S. Post Office may move the zip code page on its Web site. If you type: ***http://www.usps.gov/***, you may get the Post Office's home page, which will help you find the new address for the zip code page.

Searching on the Internet

When looking for specific topics on the Internet, you do not have to know a specific address. A search may be performed by the browser you are using. Your browser may use a variety of search engines, such as Telnet, Archie, or Lycos. Your driving instructor will help you access the appropriate engine for your search.

Here are the URLs for some search engines:

Alta Vista
http://altavista.digital.com/

Infoseek Guide
http://guide.infoseek.com/

Lycos
http://www.lycos.com/

Yahoo!
http://www.yahoo.com/

HotBot
http://www.hotbot.com/

Magellan
http://www.mckinley.com/

Excite
http://www.excite.com/

Your teacher should provide you with an Internet Resource Log. Write down the addresses of the sites that you find interesting and share them with your teacher and classmates. You may be able to save these addresses on your Web browser using the Bookmark feature, but you will need to check with your teacher.

Driving Safely on the Information Superhighway

Before you are permitted to drive solo on any highway, you must learn the rules, gain experience, and pass a driving test. Driving solo on the information superhighway is no exception.

Your driving instructor (teacher) has taught you netiquette (rules of the road) and has helped you navigate on the Information Superhighway. You are now ready to take your driving test.

As you use the Internet, keep these tips in mind to make your drive safe and effective:

- Drive defensively;
- Be polite, don't flame
- Observe the rules as spelled out and signed by you in the Acceptable Use Policy; and
- Observe the road signs–the rules of the road–that are posted by the driving instructor.

Once you have your license (ID and password) and have passed your driving test, you are ready to cruise. Be a safe and responsible consumer of the Internet.

THE DRIVING TEST
PART ONE

The following test is divided into two parts: a written test and a performance test–much like the tests you take to operate a motor vehicle. In both instances, the purpose of the tests is to ensure your parents, teachers, and administrators that you have the skills and integrity to use the privilege of accessing the Internet. Upon your successful completion of the driving tests, you will be ready to use the Internet to communicate, share, exchange, and access information. Good luck!

1. List the steps needed to go on-line in your classroom/school.

2. E-mail a message to the President of the United States. Use concise and grammatically correct language. You may address a problem you have with an administrative policy, such as student loans or education reform. You may want to send a word of praise or a note saying you admire him/her. You may also ask him/her a question about his/her views on a particular issue. Make sure that the message has some meaning. Print a copy of the e-mail message as well as the President's response.

   Presidential E-mail Address
   president@whitehouse.gov

3. How would you introduce yourself on a discussion list? Find a discussion list that appeals to one of your interests. Read through some of the discussion and decide how to enter the conversation. Print a portion of the discussion, then compose a response of how you would introduce yourself and participate in the discussion.

   Interport Communications
   http://www.users.interport.net/

   Worldwide Access
   http://www.wwa.com/

THE DRIVING TEST
PART TWO

These activities will test your driving skills on the information superhighway. Please read each activity closely and perform the skill. Print your answers through the Internet and by writing them on a separate sheet of paper. Record your sites in your Internet Resource Log.

1. Record the current weather conditions for:

DALLAS, TX

Steps

a. Access the Web URL:
http://www.usatoday.com/weather/wfront.htm/
b. Click on the U.S. map.
c. Choose "5-day city forecasts" under "Southern region forecast."
d. Scroll down to the state of Texas, and select the city of Dallas.
e. Print the weather conditions.

COLUMBIA, MO

Steps

a. Access the Web URL:
http://www.weather.com/
b. Click on the "Current Conditions" button.
c. Click on the state of Missouri on the interactive map.
d. Choose Columbia from the list of cities.
e. Choose "current conditions."
f. Print the weather conditions.

A LOCATION OF YOUR CHOICE

Steps

a. Access one of the above Web URLs.
b. Select the region and/or state of your choice.
c. Select the city of your choice.
d. Access the city's current weather conditions.
e. Print the weather conditions.

2. Find and record a joke you could use in a speech or tell your teacher.

Steps

a. Access one of the following URLs:
http://huizen.dds.nl/~afftjong/ejokes.html/
http://www.majon.com/majon/W3/best95.html/
b. Print one joke that may be shared with the class or with your teacher.

3. Search for a list of Frequently Asked Questions (FAQ) about the Internet and their answers.

   Steps

   a. Access Alta Vista Search Engine's URL:
   http://altavista.digital.com/
   b. Type the acronym ***FAQ*** and the word ***Internet*** in the search window.
   c. Click on the search button or hit the <Enter> key.
   d. When the screen is loaded, scroll down the page, choose a site that contains FAQs about an Internet component, and click on that site.
   e. Print one of the FAQs and its answer.

4. Choose a topic you are interested in and record one or more listservs you could subscribe to.

   Steps

   a. For information about listservs, visit
   http://www.earn.net/lug/notice.html#contents/
   b. To obtain a list of listservs, access the Web URL:
   ftp://ftp.nic.surfnet.nl/surfnet/net-management/earn/services/listserv.lists/
   c. Print the screen that lists the listserv you are interested in joining. (You may or may not want to join the listserv. This decision should be made with the advice of your teacher.)

5. Find and print a recipe you might cook for your family.

   Steps

   a. Access one of these Web URLs:
   http://www.foodtv.com/index.htm/
   http://homearts.com/waisform/recipe.htm/
   b. Enter the information needed to obtain a recipe.
   c. Print the recipe of your choice.

As you continue through the driving test, you will find that the instructions for the activities are less specific. You will need to decide how to search for the information requested for each activity. Hints and/or suggested URLs will be given to help you along the way. Remember to record the sites in your Internet Resource Log

6. Find and print a famous poem or short story.

   Hint: Using a search engine, type in the word "poem" or "short story." If you have a favorite poet or author, type his/her name in the search box.

7. Find a musical concert of your choice and give the name, date, location of the event, and the cost of two tickets.

   Hint: Access the web URL:
   http://www.ticketmaster.com/

8. Plan a vacation. Make plane reservations, hotel reservations, and car reservations for one week. You may go anywhere you choose, provided that the hotel and airline services are available. Realize that if you go out of the country you will need to obtain a passport and possibly a visa for each country. Find information on how to apply for these documents. Start a financial record of your plans.

Hint: This activity may be completed in several ways. One way is to decide on a destination and perform searches for airlines, hotels, and other information. Another way is to perform a search for a travel agent. Visit these travel URLs:
http://www.webscope.com/travel/homepage.html/
http://www.travelocity.com/
http://www.visit.hawaii.org/
http://www.promus-inc.com/
http://www.holiday-inn.com/
http://www.city.net

9. What is ENIAC?

   Hint: Using a search engine, type in the acronym ENIAC.

10. Locate and print enrollment information about two colleges or universities from two different states. One college should be a private college and one college should be a state supported college.

    Hint: Using a search engine, type in a university's name. To obtain a list of universities with Web sites, visit:
    http://www.clas.ufl.edu/CLAS/american-universities.html/

11. Find an advertisement for a job.

    Hint: Visit the following URLs:
    http://www.careermag.com/news/index.html/
    http://www.espan.com/
    http://www.ajb.dni.us/
    http://www.jobweb.org/

12 Convert U.S. currency into the currency of a country of your choice.

   Hint: Visit the following URLs:
   http://www.xe.net/currency/
   http://bin.gnn.com/cgi-bin/gnn/currency/
   http://www.vacation-inc.com/exchange_rates.html/

13. Get the current stock market summary.

    Hint: Visit the following URL:
    http://www.ai.mit.edu/stocks.html/
    http://www.insidewallstreet.com/

14. Find the e-mail address of a congressman or senator from your state.

    Hint: Visit the following sites:
    http://www.senate.gov/
    gopher://gopher.house.gov/

15. Find information on your hobby and print the information.

    Hint: Use a search engine to look for areas of particular interest. Type in words that are identified with your hobby.

16. Print an article from an on-line newspaper.

    Hint: Search for the name of a specific newspaper or to obtain a list of on-line newspapers, access the following URL:
    http://www.mediainfo.com/ephome/npaper/nphtm/online.htm/

17. Gopher to another country's site and print tourist information from that site.

    Hint: Select the Gopher menu item "Other Gophers" and select a foreign country's Gopher. Select the tourist information to print.

18. Find another high school on-line.

    Hint: Using a search engine and type in "high school" or if you know the name of another high school, type in the name to see if the school has an Internet address.

19. Find a museum on-line.

    Hint: Visit the following sites:
    http://www.rockhall.com/
    http://www.bvis.uic.edu/museum/
    http://mistral.enst.fr/wm/net/
    http://www.si.edu/
    http://www.slsc.org/slschome.htm/

20. If your school has a Novell server, retrieve the story "Aladdin and the Lamp," by accessing the FTP site:
    npfn.org

    Steps

    a. Select A: Internet Access from the Novell menu
    b. Select F: FTP
    c. Select A: FTP program
    d. Enter address: nptn.org
    e. Login to the remote computer
       name: Anonymous <enter>
       password: your e-mail address <enter>
    f. Type: ***dir*** <enter> (This command shows you the current directory.)
    g. Type: ***cd pub*** <enter> (This command changes the directory. If you successfully move to another director, the message "205 CWD Command Successful" will be displayed.)
    h. Type: ***cd e.texts*** <enter>
    I. Type: ***cd gutenberg*** <enter>
    j. Type: ***cd etext93*** <enter>
    k. Type: ***get alad10.txt*** <enter> (This command copies a file from a remote host to your directory.)
       The computer will ask you to give the file a local name. If you do not specify a name, a default name of ***alad10.txt*** will be assigned to the file.
    l. Type: ***quit*** <enter> (This command disconnects you from the remote host.)

    You have now transferred the file ***alad10.txt*** into your home directory. You may now use one of your word processing packages to view the file. Print out and turn in the first page of the story.

INTERNET RESOURCE LOG

NAME OF SITE/PERSON	INTERNET ADDRESS

CURRICULA THAT PUT STUDENTS ON-LINE

Students in school today will need new skills to be information workers in the 21st century. The challenge is to create the curriculum to nurture these skills. It's one thing for the teacher to know how to navigate the Internet and to find its educational "hot spots." It is quite another thing to incorporate the Internet into classroom activities in a meaningful way. The purpose of this section is to provide lesson plans that will support and enhance student learning using on-line resources. The lesson plans are presented as starting points. They are not intended to replace the teacher or the traditional resources for learning. The Internet is an extra tool that teachers may add to their instructional repertoire. To really enrich students and the classroom and to use the Internet in the most worthwhile way, teachers should weave the use of the Internet resources into their own lesson plans. The plans are intended to show how to use the Internet and its resources to attain a larger educational goal.

ORGANIZATION OF LESSON PLANS

The lesson plans in this section of the guide cover a variety of marketing subjects and focus on the current marketing education student learning outcomes. Each lesson plan includes an anticipatory set, objectives, materials, procedures, and closure. Each lesson plan contains addresses of Internet resources that may help provide content for the lesson. Not every subject or concept in marketing lends itself to using the Internet as an instructional tool; therefore, it is not possible to develop lesson plans for all of the student learning outcomes.

GUIDELINES FOR USING THE LESSON PLANS

To use the lesson plans in this section effectively, the following guidelines are suggested:

- The lesson plans may be adapted to fit into various classroom configurations and teaching styles. Use them at your discretion and for your purposes. Change them, modify them, add to them, rearrange them, use parts of them, but, above all, try them. Students are curiosity seekers and explorers. If you don't take the time to teach them how, when, and why to use the Internet as a learning tool, you will miss the opportunity to empower them as learners and as future employees.
- To really enrich students and to use the Internet in the most worthwhile way, explore what's out there and take the time to navigate to the various sites and check out their usefulness. You may rely on these lesson plans to get you started.
- To use the plans effectively, be familiar with the basics of the Internet tools and navigation techniques. To this end, the "Practice . . . Practice . . . Practice" and "Preparing Students to Go On-Line" sections will be invaluable resources

- Begin the topic of the lesson at the ***local*** level; that is, start with the traditional materials–textbooks, library print resources, etc. Then go ***global*** using the Internet.
- Because of the high demand by many teachers and students for connections to the Internet, your time on the Internet may be limited. If this is true in your school, accommodate your lesson to the time your students have on the Internet, so they may use their time wisely.
- The Internet will ***never*** replace ***you***! You are the key to your students learning in the classroom. However, allow your students to communicate with others through listservs and discussion groups. Don't let them overuse the experts or other contacts through listservs or discussion groups, and don't let your students use them as a replacement for contact with you. In addition, teach your students to write or e-mail "thank you" notes to the people who send them information.

Evaluating Your Students' Work

The types of products your students produce using the Internet will not differ from the types of products your students produce without using the Internet. These products are usually in the form of verbal or written reports. You should use the same standards to evaluate a report generated from using the Internet as you would to evaluate a report generated from using textbooks and other references. Review your standards with your students at the beginning of each class assignment. These reviews will help reiterate that the Internet is just another resource for finding information.

Caveats

The Internet is continuously changing, growing, and evolving. Change is its nature. Some addresses may change after publication of this manual; new resources may appear. Internet experts have estimated that a new network is added to the Internet every nine minutes, making the Internet an extremely dynamic environment. You should access and be familiar with each location before allowing students to go on-line; however, realize that you can't know everything and every place on the Internet.

There will be times while on the Internet that a connection is broken with the discouraging error message "Your connection seems to have been terminated." Assure yourself and your students that it is not anything you or they have done. The broken connection illustrates the instability of the Internet at times. Reconnect and continue your journey. (Because connections do go down, it is always a good idea to write down the URL of Internet sites you wish to remember.)

World Wide Web addresses are case sensitive, so be sure you and your students key them in just as you see them listed. Also, remember to use the tilde (~) character when you see it. The tilde is just as valid as any letter or number used in any address.

Other Sources for Lesson Plans

Other on-line resources that might help you develop classroom instruction include:

Curry School
http://curry.edschool.virginia.edu/

The SILS Clearinghouse
http://www.lib.umich.edu/chhome.html/

AskERIC Virtual Library
http://ericir.syr.edu/
(access Lesson Plans)

NYSERNet
http://nysernet.org/

Scholastic Network
http://www.scholastic.com/

Fed World
http://www.fedworld.gov/

The Virtual Tourist
http://wings.buffalo.edu/world/

New Jersey NIE Home Page
http://njnie.dl.stevens-tech.edu/

Classroom Connect
http://www.classroom.net/

Internet Education Statistics
http://k12.cnidr.org/janice_k12/states/states.html/

K-12 WWW Sites
http://www.sendit.nodak.edu/k12/

BBN National School Network
gopher://copernicus.bbn.com/

CICNet K-12 Gopher
gopher://gopher.cic.net/

Instructional Materials Laboratory
http://iml.coe.missouri.edu/

The Teacher's Resource
http://www.eyesoftime.com/teacher/index.html/

Library of Congress Learning Page
http://lcweb2.loc.gov/ammem/ndlpedu/educator.html/

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National Center for Research in Vocational Education
http://vocserve.berkeley.edu/

Teachers Helping Teachers
http://www.pacificnet.net/~mandel/

B.E.S.T., Best Education Sites Today Search Engine
http://eyecatchers.com/eyecat/BEST/

The Web as a Learning Tool
http://www.cs.uidaho.edu/~connie/index.html/

K-12 World
http://www.k-12world.com/

Cybertown's Education Center
http://www.cybertown.com/educate.html/

Online Educator
http://www.ole.net/ole/

Lesson and Unit Plans

The lesson and unit plans that follow have been developed for use in the Fundamentals of Marketing and Advanced Marketing curriculum. In order of appearance, the topics include:

Study Marketing in College
Evaluate Resumes or You Hire!
Take a Field Trip on the Internet
Plan for Products and Services for the Cyberspace Marketplace
Understand Economics
Establish a Code of Job Ethics in Marketing
Explore Advertising Law
Collective Bargaining
Understand Financial Management
Conversion of Cash
Employee/Employer Communication via E-mail
Analyze Internet Advertising
Start Your Own Small Business
Evaluate Doing Business on the Internet
Market a Product on the Internet
Basic Employment Unit

Again, make the lesson plans yours by adding, deleting, modifying, and adapting them to your style of teaching and your students' style of learning. You are teaching very valuable skills when you provide your students with the opportunity to do research on the Internet and to manipulate the information they find into useful formats. Remember, above all, have fun!

LESSON PLANS
STUDY MARKETING IN COLLEGE

EXPECTED STUDENT LEARNING OUTCOMES

Identify a Marketing Occupation Objective
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Explore various Internet locations for on-line colleges and universities
Explore opportunities for students to communicate with a faculty member in marketing at a specific college or university
Use the information to create a written and an oral report

OBJECTIVES

Students will demonstrate the ability to access and explore specific college or university home pages on the Internet by using the search feature of the browser and entering the name of the college or university they may be interested in attending.
Students will explore admission requirements, tuition costs, application procedures, availability of scholarships, and courses in marketing.
Students will communicate via e-mail with a faculty member in marketing at a college or university.
Students will develop a written and an oral report to present to the class.

MATERIALS NEEDED

Computers with Internet capabilities
An e-mail address of a marketing faculty member
College and university catalogs

PROCEDURES

1. Using your knowledge of the necessary college preparation for a marketing career, share the courses you took. Ask your school counselor for college or university catalogs that list course offerings in marketing. Provide these catalogs to the students as an additional resource.

2. Develop a list of items related to general college/university entrance and marketing program requirements for students to find on the home page of the college or university they choose to access. The items might include:
   - Admission requirements,
   - Tuition costs,
   - Application procedures,
   - Availability of scholarships,
   - Room and board costs,
   - Courses in marketing,
   - Clubs and organizations related to marketing or business,
   - The number of faculty members in the marketing department, and
   - Other courses a person majoring in marketing has to take.

3. Have students use the search feature of your browser to access a specific college or university and follow the directions to that institution's home page, or have them access a list of on-line colleges or university at the following site:
   http://www.finweb.com/bschool.html/

4. Have your students contact a marketing faculty member at their chosen university via e-mail to find out more about the marketing program at that institution. Ask the faculty member what kind of employment opportunities their graduates have obtained.

5. Prepare a written and an oral report to present to the class.

6. Display the information on a bulletin board, entitled **Using the Internet to Locate a College or University to Major in Marketing**.

CLOSURE

In this lesson, students have identified a tentative personal occupational interest in marketing and the educational requirements for becoming qualified to apply for an entry-level marketing position. The interest in a marketing position has led them to explore the educational requirements for becoming a marketing professional. To broaden and deepen their interest, they have accessed on-line college or university information and communicated via e-mail with a faculty member who prepares marketing professionals.

EVALUATE RESUMES OR YOU HIRE!

EXPECTED STUDENT LEARNING OUTCOMES

Identify a Marketing Occupation Objective
Secure Advanced Marketing Employment
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Expand upon resume-writing techniques from the Basic Employment Unit
Explore various Internet locations to find on-line resumes and evaluate these resumes for form and content
Explore various Internet sites to find marketing positions
Evaluate the on-line resumes for a marketing position
Use the information to create an on-line resume

OBJECTIVES

Students will demonstrate the ability to access and explore specific Internet sites related to marketing positions and on-line resumes using keywords, search engines, and search techniques.
Students will explore current trends of on-line resumes.
Students will review resume preparation advice.
Students will utilize the information they find by developing their own on-line resume.
Students will use information about on-line resumes to make a hiring decision.

MATERIALS NEEDED

Computers with Internet capability
Copies of an up-to-date resume workbook, such as one of the following:
Career Choices and Changes. Available from Academic Innovations, 3463 State Street, Suite 219A; Santa Barbara, CA 93105; 805-967-8015
Your Resume Guide. University Extension. Free from The Missouri Career Information Hotline, 1-800-392-2949. (This Guide has excellent examples that may be compared with on-line resumes.)

PROCEDURES

1. Discuss occupational areas in marketing. These areas might include: salesperson, stock clerk, entrepreneur, customer service representative, bookkeeper, bank teller, cashier, marketing assistant, marketing research assistant, telemarketer, sales demonstrator, airline reservation agent, advertising copywriter, marketing manager, etc.

   Have your students access the on-line *Occupational Outlook Handbook* to find a list of marketing jobs and other occupational information, such as future employment trends.
   http://www.espan.com/
   gopher://umslvma.umsl.edu/

2. Access sites on the World Wide Web that offer a list of job openings, such as:
   http://www.careermosaic.com/
   http://www.espan.com/
   http://www.occ.com/occ/
   http://www.nando.net/classads/employment/careers.html/

http://www.monster.com/
http://www.jobweb.org/
http://www.ajb.dni.us/
http://rescom.stanford.edu/jobs.html/
http://www.cweb.com/
http://www.careersonline.com.au/
http://www.careerpath.com/
http://gopher.uconn.edu/~jpa94001/papers.html/

As a class, make a list of the marketing jobs that are listed at these sites.

3. Discuss the role that resumes play in the employment process.

4. Develop a list of factors that are important for on-line resumes before accessing on-line resumes. These factors might include: appearance, technical features (correct spelling, grammar, punctuation, etc), length, references, career objectives, formatting features (bold, type and size of font, home page links, etc.), order of textual information (chronological, functional, educational, experience, etc.), differing traditional resume formats, etc.

5. Have students access the Internet sites listed below or find other sites through Web searches that contain on-line resumes.
   http://owl.english.purdue.edu/
   http://www.espan.com/
   http://www.occ.com/occ/

   Have them choose two resumes of people applying for marketing positions and evaluate them according to the list developed in step 4. Have your students use the questions listed below to evaluate the resumes and have them share their evaluation with the class in an oral presentation.
   - What did you like about the resume?
   - What did you dislike about the resume?
   - How was the resume organized: logical, functional, chronological, other?
   - What did you learn about the individual through his/her resume?
   - How could it have been improved?
   - Were there typos or other distractions in the resume?
   - How does an on-line resume differ from the traditional resume that is illustrated in a resume guide?
   - Would you interview the individual based on the resume?
   - How do you feel about putting your resume on the Internet?

6. Based on class discussion and examples of on-line resumes, have your students prepare a one-page, on-line resume for a specific marketing job.

CLOSURE

In class today, students have been exposed to a variety of marketing positions and resume formats that job seekers have put on the Internet. After class discussion on resume formats and after viewing and evaluating on-line resumes, students should be able to create a one-page, on-line resume to apply for a marketing job. Students should have a broader understanding of what marketing jobs are listed on the Internet, as well as how to create a one-page, on-line resume to apply for a marketing position.

If possible, the teacher may want to display the on-line and traditional resumes created by the students on a bulletin board so that students in other classes have access to them.

TAKE A FIELD TRIP ON THE INTERNET

EXPECTED STUDENT LEARNING OUTCOMES

Understand the Marketing Mix
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Begin or continue discussion of marketing in society
Explore the companies that are doing business on the Internet
Evaluate an on-line mall: compare the businesses, customers, product presentation, and buying potential of the on-line mall with a local or nearby shopping mall and/or store catalogs
Use the information to create an oral and a written report

OBJECTIVES

Students will demonstrate knowledge of how marketing serves people.
Students will be able to discuss marketing concepts.
Students will explore CommerceNet and Hoover's Online to see how many major companies are using the Web to transact and promote business.
Students will explore the Branch Mall on the Internet.
Students will prepare an oral and a written report of the information they obtain from CommerceNet or Hoover's Online on how a major company does business on the Web.
Students will access the Branch Mall and evaluate, compare, and contrast the on-line shops with the businesses and stores in a local shopping mall.

MATERIALS NEEDED

Computers with Internet capabilities
Preparatory questions to answer about businesses on the Internet
Copies of store catalogs

PROCEDURES

1. Review how marketing serves people, the marketing concepts, the four Ps of marketing and how they relate to the marketing concept, and why the field of marketing is dynamic. The dynamic nature of marketing will be demonstrated in this lesson with a visit to the World Wide Web to find out what kinds of companies and shops are doing business on the Internet.

2. Develop a list of questions that students are to answer before exploring each site in today's lesson. Examples of questions might include:
   - What major companies are promoting their products on the Web? Choose one and explore it in depth.
   - What kinds of businesses are located in the on-line mall? Are the products easy to order? Who are the potential customers? What are the major differences in doing business in each mall?
   - Compare the product presentation at a shopping mall, an on-line shopping mall, and a catalog.
   - Apply the four Ps of marketing to the shops in the on-line mall. How are they used?
   - How would the students prefer to do business? Where would their parents prefer to do business?

3. Placing your students in small groups or teams, have them access the sites listed below to see how major companies use the Web to transact and promote their business.

   Commerce Net
   http://www.commerce.net/

   Hoover's On-line
   http://www.hoovers.com/

   The Branch Mall
   http://www.branchmall.com:1080/index.html/

   Other On-line Shopping Malls
   http://www.ro.com/ShopInternet/malls.html/

   The All-Internet Shopping Directory
   http://www.webcom.com/~tbrown/

   Shopping Spree Marketplace
   http://www2.pcy.mci.net/marketplace/index.html/

4. Have your students prepare a written report on one major company they explored to present orally to the class. Display the reports on a classroom bulletin board entitled **Did You Know These Companies are Doing Business on the Internet?**

CLOSURE

In class today, students have been exposed to marketing and selling products on the Internet. By comparing the traditional mall to the on-line mall, students should have a better understanding of the dynamic scope of the marketing field and the many marketing possibilities that will be available through the use of the Internet. Students also should have created and presented a report of their analysis of doing business in the new medium. By displaying their reports, students are encouraged to use effective writing techniques and to share knowledge with their peers and other faculty members.

PLAN FOR PRODUCTS AND SERVICES FOR THE CYBERSPACE MARKETPLACE

EXPECTED STUDENT LEARNING OUTCOMES

Plan for Products and Services in the Marketplace
Understand Human Relations in Marketing
Use Oral Communications in Marketing

ANTICIPATORY SET

Acquire and use e-mail skills
Exchange information with an individual keypal or class in another town, state, or country to find out about the local economy and related demographics: fads in clothes, music, fast food, snacks, etc.; and other pertinent marketing information
Use the information to create an oral and a written report

OBJECTIVES

Students will demonstrate knowledge of the "Rules of the Road."
Students will demonstrate effective writing techniques on the Internet.
Students will demonstrate how to use e-mail software, how to use their password, and how to apply the correct address protocols.
Students will be able to access the U.S. Bureau of the Census on-line to find (1) demographic data for their town or state and (2) the demographic data for their keypal or class.
Students will be able to discuss similarities and differences in trends, economy, and demographics, and know how to plan for products and services in the marketplace.
Students will share (in an oral and a written report) the information they acquire from their keypal or class.

MATERIALS NEEDED

Computers with Internet and e-mail capabilities
Keypal e-mail addresses for each of your students
Preparatory questions that will provide an understanding of the products and services that are available in another town or state or country

PROCEDURES

1. Explain the role that product/service planning activities play in a company's success in the marketplace.

2. Identify factors that influence product/service planning: price, motives for buying (physical and psychological), family, friends, work environment, personality, attitude, perceptions, prestige, etc.

3. Have your students access the U.S. Bureau of the Census to acquire primary data, such as demographic information about another city in Missouri or a town in another state.
   http://www.census.gov/

   Or have your students acquire on-line demographic information about another country.
   http://www.odic.gov/cia/publications/pubs.html/95fact/index.html/
   http://lib4.fisher.su.oz.au:80/Guides/Government/index.html/

4. Have your students formulate a survey instrument using the information they gathered on-line about the city, town, state, or country of their choice. Have your students formulate

questions that they may ask a keypal. (To save time, students could develop the survey instrument off-line in word processing software and upload the survey electronically to their keypals. In addition, any on-line data that they receive from their keypals can be downloaded onto a disk for future reference. Since each computer system and its related software are different, please check with your technology coordinator to learn how to upload and download files.)

The questions to include in the survey may include:

- What is the population of your town, state, and country?
- Do most people finish high school and go on to college in your town? Do you plan to go to college or other type of school after graduation?
- What kinds of industries and businesses are there in your town? What are the jobs you can get in them? Do you plan to work in your town when you finish high school? What kind of job?
- Tell me some interesting facts about the location of your town.
- What are the popular musical groups and songs, clothing, foods and restaurants, cars, and hangouts in your town?
- Do you work during or after school?
- What kinds of activities (dances, proms, organizations, etc.) does your school sponsor?
- How do you spend your leisure time?
- What was your favorite vacation?
- Do you have a spring break? What did you do during your last spring break?
- How large is your family? How long have you lived in your town?
- Have you used the Internet? Do you have access to on-line malls?

5. Use the exercises in the "Practice . . . Practice . . . Practice" section to teach students how to use the e-mail software. A good hands-on way to show the students how e-mail works is to have them e-mail

   info@wentworth.com

   Have your students type: ***send welcome*** in the body of the message so that a congratulatory message will be sent back to their mailboxes.

6. Arrange e-mail contacts for your students so that they can each write to a keypal. Set up the exercise by corresponding (via e-mail) with the teacher of the keypals. Find out the difference in time zone, in what course the keypals use e-mail, how often your students can expect to receive e-mail from them, etc. Inform the teacher of the kind of information your students will be seeking and how often your students will be sending e-mail. To find keypals, send e-mail to these locations:

   majordomo@citybeach.wa.edu.au (In the body of the message, type: subscribe ekids)
   fishhoek@uctvax.uct.ac.za

   Or URL to:

   http://www.reedbooks.com.au/heinemann/global/global1.html
   gopher://wealaka.okgeosurvey.gov/k12/Keypals wanted/

   Your students may need to contact their keypals more than two or three times to obtain all of the information they will need to develop their written and oral report.

7. Have students prepare a written report to present orally to the class. Display their reports on a bulletin board, using a map of the United States or the world to pinpoint the location of the keypals.

8. As a class, discuss how the demographics gathered are the same as or different from their town and school. What is the value of knowing this information for marketing students? Lead a class discussion about the products and services that could be marketed on the Internet as a result of the information they obtained from their keypals. Tie in this information with the lesson "Take a Field Trip on the Internet."

CLOSURE

To complete this lesson, students have identified a source for acquiring primary data about products and services in the marketplace, beginning with their own town. Students also have acquired skills in using e-mail, demonstrating netiquette and on-line writing skills, and preparing both a written and an oral report. This lesson plan also may be completed in teams.

UNDERSTAND ECONOMICS

EXPECTED STUDENT LEARNING OUTCOMES

Understand Economics and Economic Activities
Use Oral Communications in Marketing

ANTICIPATORY SET

Define terms related to economics and economic systems
Use on-line resources to acquire domestic and international economic statistics
Use the information to contribute to a class discussion

OBJECTIVES

Students will demonstrate the ability to explore specific concepts related to business and economic data.
Students will be able to access the Internet Business Center site and an international Web site to acquire and use economic data.
Students will be able to discuss their findings in a class discussion.

MATERIALS NEEDED

Computers with Internet capabilities

PROCEDURES

1. In a class discussion, define economics as a process, identify economic activities and the major types of economic resources, explain the importance of understanding economics, and compare and contrast the characteristics and values of three major economic systems.

2. Use the on-line sources listed below to find information that will graphically illustrate the concepts of profit, production, gross domestic product, and export/import data for the United States and another country. Compare the characteristics of the private enterprise system of the United States with the economic systems of two other countries, such as Cuba, Canada, Singapore, Great Britain, etc.

   Internet Business Center
   http://home.tig.com/cgi-bin/genobject/index/

   University of Sydney Government Internet Guide
   http://www.library.usyd.edu.au:80/Guides/Government /index.html/

   CIA World Fact Book
   http://www.odci.gov/cia/publications/95fact/index.html/

   NYSERNet
   gopher://nysernet.org/

3. Share the information in a class discussion that compares and contrasts the three economic systems and their important characteristics.

4. This lesson could be completed in teams of students who have been given a specific economic system to research on-line.

CLOSURE

The information in this lesson plan provides knowledge of economic systems, activities, resources, characteristics, and values. Students became familiar with the private enterprise system that allows consumers, business owners, and workers to make basic economic decisions. Students identified other economic systems and contrasted these systems with the private enterprise system.

The lesson plan "Take a Field Trip on the Internet" covers doing business on the Internet–another medium of the private enterprise system.

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ESTABLISH A CODE OF JOB ETHICS IN MARKETING
(as a part of the Basic Employment Unit)

EXPECTED STUDENT LEARNING OUTCOMES

Identify the Ethical and Social Responsibilities of Marketing
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Describe the need for ethical behavior in marketing
Identify ethical behavior (e.g., honesty, reliability, "walking the talk," teamwork, decision-making, problem-solving, integrity, working with people from diverse backgrounds, fairness in judging and dealing with others, adhering to company policies and guidelines, courtesy, politeness, the Golden Rule, and learning and teaching others) on the job
Use on-line resources to access articles and/or case studies regarding ethics
Use the information to create an oral and a written report

OBJECTIVES

Students will write a personal code of job ethics.
Students will demonstrate ability to access on-line search engines and resources to find and print one article or case study related to job ethics.
Students will be able to evaluate the article and/or case study.
Students will share the information they find in a written and an oral report.

MATERIALS NEEDED

Computers with Internet access
A worksheet of job ethic factors to look for on-line and to include in the report

PROCEDURES

1. Discuss ethical and social responsibility of people in marketing: appropriate personal ethical behavior and marketing ethics. Discussion may center on the factors identified in the AMA Code of Ethics, which may be accessed at the following site:
   http://www.ama.org/join/join.html/

2. Explain the importance of analyzing ethical behaviors and social responsibility and its relation to a personal code of ethics. What and who are the institutions that help develop a personal code of ethics? These institutions might include home environment, schools, religious affiliations, significant people (family, co-workers, teachers, friends, minister, or rabbi), clubs, local businesses, etc. Discuss which of these sources have had the most significant impact on your students' personal code of ethics.

3. Use an exercise or case study from a marketing textbook to set the stage for researching an article on job ethics. An example of a case study may be found on page 483 of *Marketing: Practices and Principles* or you may present this scenario:

   You and your best friend work in restaurant. Your friend gives free food to friends and family whenever she/he knows he/she won't get caught. Should you do anything about it?

4. Have your students tentatively outline their personal code of job ethics before doing on-line research. A personal code of ethics might begin as follows: "My personal code of ethics is based on . . . and includes . . . "

5. Have your students access the Internet sites listed below or encourage them to find other sites through Web searches related to job or personal ethics.

   gopher://ericir.syr.edu/
   http://ericir.syr.edu/
   http://www.nando.net/epage/htdocs/links/newspapers.html/
   http://www.yahoo.com/business/

   Have them read and evaluate at least three articles, and choose one to share with the class in written and oral presentations. Have your students use the factors in the AMA Code of Ethics to evaluate the articles and write about and present the article they chose. (You may want to evaluate an article as a class so that students understand the process.) A worksheet with the following questions also may help students to focus on the content of the articles as they are looking for articles:

   - Does the article mention the responsibilities of the marketer?
   - Are the words honesty and fairness mentioned in the article? What other ethical behaviors are mentioned?
   - Are the rights and duties of the marketer related to products or services offered mentioned? Are risks disclosed? Are extra-cost, added features treated up front?
   - Are the promotion, distribution, and pricing factors of the product or service handled in such a way that there is no false or misleading information and no effort to try to manipulate the reader unduly? Is all pertinent information disclosed in an honest and forthright manner?
   - Can you tell from the tone of the article if the research for the product or service has been completed in a way that does not misrepresent or omit pertinent research data?
   - If the article focuses on organizational relationships, can you tell whether or not the author subscribes to the AMA Code of Ethics? What additional factors related to organizational relationships does the author mention?
   - What are the article's conclusions or recommendations about the product, service, company, or author?

6. Have students prepare their final personal code of job ethics and share it with the class. Post the personal codes of ethics (if students agree) for other students and teachers to review.

CLOSURE

In discussing, researching, and developing a personal code of job ethics, students begin to understand the ethical and social responsibilities of marketers to consumers. Sharing the information obtained from the articles found on the Internet should help students realize the breadth and depth of the issues of ethics in business and the world today. By developing their own personal code of ethical behavior and putting it into writing, students will realize how they must act toward their peers, teachers, administrators, parents, supervisors, and customers. Additionally, they have had to think through the factors (including people and events) that have shaped their personal code of ethics.

EXPLORE ADVERTISING LAW

EXPECTED STUDENT LEARNING OUTCOMES

Analyzing Advertising Media
Understand Government Regulations in Marketing Enterprises
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Continuation of "Analyze Internet Advertising" or as a follow-up lesson to "Establish a Code of Job Ethics in Marketing"
Discuss the need for advertising law
Identify agencies that regulate advertising law
Use on-line resources to access articles and information about the Federal Trade Commission, advertising principles, Better Business Bureau, etc.
Use the information to create an oral and a written report

OBJECTIVES

Students will know the need for advertising law.
Students will know the governmental agencies that regulate advertising and why.
Students will demonstrate ability to access on-line search engines and resources to find and print one article related to advertising law.
Students will be able to evaluate the article in oral and written reports.

MATERIALS NEEDED

Computers with Internet capabilities

PROCEDURES

1. As a class, discuss the need for advertising law. What are the rights and responsibilities of companies that advertise? Does the AMA Code of Ethics have anything to do with ethical advertising? If yes, what parts.

   AMA Code of Ethics
   http://www.ama.org/join/join.html

2. In groups, have the students browse the Internet sites listed below for at least three articles or other information related to advertising law, especially advertising on the Internet. The factors from the AMA Code of Ethics may assist students in looking for articles.

   http://www.webcom.com/lewrose/article.html/
   http://www.ftc.gov/
   http://ericir.syr.edu/
   http://www.lawiindiana.edu/law/lawindex.html/
   http://adage.com/

   In the lesson "Analyze Internet Advertising," students have evaluated and analyzed the types of advertising on the Internet. What are the rights and responsibilities of companies who use the Internet to advertise? Are they different from other kinds of advertising media? If so, how? If not, why not? What potential issues related to advertising law may surface from using this medium?

3. In groups, have the students print the one article they want to use to develop the oral and

written report and share the report with the class.

4. Conclude the exercise by reinforcing the need for advertising law and by discussing if and why advertising on the Internet may need to regulated.

CLOSURE

By analyzing, evaluating, and exploring effective advertising and related advertising regulations, students began to understand the breadth and depth of the advertising functions of marketing. Students should gain a greater knowledge of and experience in the role of advertising and its ethical, legal, and social uses in marketing and on the Internet.

COLLECTIVE BARGAINING

EXPECTED STUDENT LEARNING OUTCOMES

Identify Labor and Management Relations
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Prepare students for contract and labor disputes in business and work world
Identify issues discussed during labor-management negotiations
Introduce students to the procedure of "collective bargaining" by experiencing the development of "proposals" and presenting them to the opposite side of the "table"
Use on-line resources to access articles and/or case studies regarding management-labor disputes and labor relations
Use the information to participate in a management/labor role play

OBJECTIVES

Describe the types and levels of union organization.
Identify the issues most commonly discussed during labor-management negotiations.
Explain the effects of unionism on labor and management.
Discuss the role of management in dealing with labor unions.
Participate in a role-playing exercise that includes developing a "proposal" to present to the other side of the "table."

MATERIALS NEEDED

Computers with Internet capabilities
A marketing textbook with a chapter that contains a list of common goals of management and labor

PROCEDURES

1. Discuss the following labor and management relations:
   - The types and levels of union organizations,
   - The issues most commonly discussed during labor-management negotiations,
   - The effects of unionism on labor and management,
   - Management's role in labor relations, and
   - The role of each side in negotiations: bargaining in good faith.

2. Have the students access the following sites to read information about labor relations:
   gopher://ericir.syr.edu/
   http://ericir.syr.edu/
   http://www.yahoo.com/business/
   http://www.yahoo.com/News/Usenet/

   Have then try to find a journal or newspaper article that discusses how a recent labor relation problem was solved.

3. Once your students have conducted their research, divide the class into two groups and identify which group will represent labor and which group will represent management. Have each group select four members to be their "negotiating team." Lead a class discussion of goals of labor and management so that everyone understands what the motivation of each

side may be. These goals might include any or all of the following: management; productivity; conflict/cooperation with union members and management; hiring, firing, and promoting; expectations of workers for flexible work assignments; labor; wages; hours of work/overtime; working conditions; job security; fringe benefits; and/or the grievance process.

4. The management group will prepare a proposal that might include any or all of the factors (or others) listed above and present it to labor representatives. The labor group will use the factors (or others) to prepare a proposal to present to management. Provide time for each group to prepare its proposal, select its negotiating team, and practice its presentation.

5. Once each group has completed its task, have them meet at the "table" to present its specific proposals.

6. Conclude the lesson and the exercise with a review of the procedures that led to the presentation of the proposals.

CLOSURE

Students became familiar with the aspects of labor and management relations. Students should have a broader understanding of the types and levels of unions, and labor and management. After a mock negotiation, students should have developed an appreciation for each side of the "table," the need for unionization, and the importance of good faith bargaining.

UNDERSTAND FINANCIAL MANAGEMENT

EXPECTED STUDENT LEARNING OUTCOMES

Understand Financial Statements
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Prepare students for interpreting annual or quarterly business reports
Access home pages of corporations for annual reports for class discussion
Compare traditional sources of annual reports with information obtained from on-line sources
Use on-line resources to access financial statements
Use the information to participate in class discussion and an oral report

OBJECTIVES

Explain the importance of recordkeeping to financial management.
Describe the working parts of the income statement and the balance sheet.
Calculate business ratios and analyze financial statements.
Interpret financial statements.
Describe the role of expense and sales budgets in financial planning.
Complete financial statements (i.e., balance sheet, income statement).

MATERIALS NEEDED

Computers with Internet capabilities
A marketing textbook
Copies of various financial statements of companies in your community

PROCEDURES

1. Provide your students with examples of financial statements. Discuss the types and component parts of financial statements, including income statements and balance sheets. The component parts of a financial statement include: operating ratios, sales revenue, costs of goods sold, gross margin, expenses, pre-tax earnings, and net income. The component parts of a balance sheet include: assets, liabilities, owner's equity, and current ratio. Use the financial statements from companies in your community to introduce, discuss, and calculate the business ratios.

2. Provide an exercise in which students have to interpret the financial information from the income statement and balance sheet of a local company or from your marketing textbook. (In the textbook *Marketing: Practices and Principles*, an example of an income statement is found on page 512, and an example of a balance sheet is found on page 514.)

   Using an income statement, your students should be able to answer the following questions:
   - What are the company's total expenses? Revenues? Sales? Net income (profit)?
   - What kind of expenses does the business have?
   - Calculate the company's selling price markup using the following formula:

$$\frac{gross\ margin}{sales\ revenue} = operating\ ratio$$

   - As a consumer, what is the value of knowing this information?
   - As a marketing professional, what is the value of knowing this information?

Using a balance sheet, your students should be able to answer the following questions:

- How do the company's assets compare to its liabilities and owner's equity? Are the assets greater than liabilities?
- A company's current ratio indicates its working capital and ability to pay its debts. Using the formula below, calculate the current ratio between the company's assets and liabilities?

$$\frac{current\ assets}{current\ liabilities} = current\ ratio$$

- As a consumer, what is the value of knowing this information?
- As a marketing professional, what is the value of knowing this information?

3. Have your students access one of the on-line resources listed below and select three companies.

SEC Edgar Homepage
http://www.sec.gov/edgarhp.htm/

Yahoo! Business Directory
http://www.yahoo.com/business/
http://www.yahoo.com/News/Usenet/

Or have your students access an individual company's Web site, such as:

AT&T
http://www.att.com/

Ford Motor Company:
http://www.ford.com/

Wal-Mart
http://sam.wal-mart.com/

Coca Cola Corporation
http://www.cocacola.com/

Have your students print out the companies' annual or quarterly reports and calculate the same information they did in step 2.

4. Have students write a paper comparing the financial statements of the local company to the on-line company. The paper may include information on the following:
   - What is financial management?
   - Why is it important for a company to keep proper records?
   - How is a balance sheet different from an income statement?
   - What does the balance sheet show for each company? What is each company's current ratio or working capital?
   - What does the income statement show for each company? What is each company's operating ratio?
   - How and why are the operating and current ratios useful to the marketer? to the consumer?
   - Based on each company's assets, liabilities, net income or loss, and business ratio, which company is "stronger on paper?"

The students must justify their answers. The paper must be written in the format established by the instructor.

5. Have your class assume the role of company stockholders or board of directors. Have each student assume the role of company president or chair of the board and present his/her findings to the stockholders or board. Stress that the report should be presented in a professional manner.

CLOSURE

In today's class, students have learned about financial management and its importance to the process of planning the use of money and measuring its flow. Specifically, students have had to participate in an in-class exercise that asks them to interpret information on an income statement and a balance sheet. By participating in this exercise, students are prepared to access a company's on-line annual or quarterly report and interpret its financial statements.

CONVERSION OF CASH

EXPECTED STUDENT LEARNING OUTCOMES

Recognize the Importance of International Business
Use Written Communications in Marketing

ANTICIPATORY SET

Introduce conducting business in a foreign country including pricing and money conversions
Explore the value of money of one country as compared to U.S. dollars

OBJECTIVES

Students will demonstrate the ability to explore the World Wide Web for currency conversion tables.
Students will use the Internet to convert American dollars to three different countries' currencies.
Students will explain the difference between currencies and how currency differences affect marketing in a foreign company.

MATERIALS NEEDED

Computers with Internet capabilities

PROCEDURES

1. Discuss the implications of conducting business in a foreign country. What are some of the barriers to marketing in a foreign country? Some barriers to discuss include: language, culture, and currency.

2. Discuss the importance of converting money from one country's currency to another country's currency. Allow the students to voice their opinions. Encourage the students to think about the differences between each country's currency.

3. Have the students choose three countries. They must identify the country and the name of that country's currency. Identify an amount of money in American dollars that each student will use to convert to the currency of the countries of his/her choice.

4. Have the student access the sites listed below or access a Web search engine and conduct a search using the words ***currency conversion***.
   http://www.xe.net/currency/
   http://bin.gnn.com/cgi-bin/gnn/currency/
   http://www.intac.com/

5. Have the students write their search and conversion results in a brief discussion paper. In their papers, students should discuss the countries they chose, the name of the currency, and the amount of currency resulting from the conversion. The paper should be no more than two pages but should be keyed and in an acceptable format. The paper also should express whether it is worthwhile to do business with the chosen country.

CLOSURE

When students have completed this lesson, they will realize that the business world is more that a "dollars and cents" world. After converting American dollars into another currency, students should have a greater understanding of the global market place. Students should realize that dealing with other countries means dealing with other currencies.

EMPLOYEE/EMPLOYER COMMUNICATION VIA E-MAIL

EXPECTED STUDENT LEARNING OUTCOMES

Facilitate Communication Between Employees and Management
Use Written Communications in Marketing

ANTICIPATORY SET

Introduce management/employee communication
Define the role of the marketing manager in facilitating communication between management and employees
Use Internet tools to facilitate communication

OBJECTIVES

Students will discuss different ways to communicate between management and employees.
Students will discuss various employee/management situations that require written communication.
Students will create an example of an e-mail letter that would pertain to employees and an e-mail letter that would pertain to management.

MATERIALS NEEDED

Computers with e-mail and Internet capabilities
E-mail address assigned to each student
Scenarios that the students can use to create their letters

PROCEDURES

1. Discuss the chapter from your marketing textbook that covers communication between employees and management. Look at the types of communication between employees and management. Discuss the communication roles of the employee and the manager. Look at the "traditional" types of communications such as letters and memos. Introduce the idea of using e-mail information.

2. Review the netiquette rules in the "Preparing Students to Go On-Line" section and discuss how these rules pertain to e-mail information.

3. Discuss the advantages and disadvantages of using e-mail to communicate company information compared to using conventional lines of communication. The discussions may include the issue of privacy with e-mail.
   - Is e-mail totally private?
   - What are the limits of using e-mail?
   - Would you discuss personnel and personal matters through e-mail or the Internet?
   - Are there any documentation issues when using e-mail?
   - Who owns e-mail messages sent on a company system?

4. Divide the class into groups of at least four. Identify one or two students as the inside marketing person or field representative, one student as the director of marketing, and one student as another employee, such as a manager.

5. Assign the students one of the scenarios listed below or have them create one on their own.
   - Communication from a manager to field representatives about a new product line.
   - Communication to field representatives about new price lists.

- Communication to a manager about problems with a product.
- Communication from a field representative to a manager about product availability.

The marketing person must take the problem and relay it to a manager. The manager must acknowledge the message and address the issue. Each person must accept his/her role and answer his/her part in the scenario appropriately using e-mail

6. Each group will print all e-mail messages. These messages will be distributed to another group for evaluation of the information conveyed. The groups will turn in their e-mail messages for evaluation.

CLOSURE

After completion of this lesson, students should be familiar with the different methods of business communication. Students should become familiar with e-mail as a method of sending short messages, formal letters, and memos. Students will see that one of the benefits of e-mail is that it is a quick and efficient way to convey information to a large group of people. Students also will weigh the advantages, disadvantages, and issues related to using e-mail.

ANALYZE INTERNET ADVERTISING

PART 1

EXPECTED STUDENT LEARNING OUTCOMES

Analyzing Advertising Media
Use Written Communications in Marketing

ANTICIPATORY SET

Introduce advertising on the Internet
Explore advertising on the Internet
Access information about how to advertise on the Internet from sources on the Internet and from other conventional sources, such as a marketing textbook and a library

OBJECTIVES

Students will demonstrate the ability to explore specific advertising concepts on the Internet by accessing specific Internet addresses and by using search engines on the World Wide Web.
Students will identify sites on the Internet with advertising guidelines and information.
Students will identify specific concepts to follow when advertising on the Internet by researching the Internet and conventional sources, such as marketing textbooks and a library.
Students will develop a check list to analyze advertising on the Internet by information gleaned from their research methods.

MATERIALS NEEDED

Computers with Internet capabilities
Conventional resources, such as textbooks, magazines, and other library resources

PROCEDURES

1. Introduce advertising within the context of your textbook and/or from other resources you may have. Discuss the purposes and techniques of advertising.

2. Have your students read conventional resources, such as textbooks, magazines, and other library resources, to gather information about advertising. Evaluate the advertising methods used in traditional sources, such as magazines, newspapers, billboards, etc.

3. Have the students use a search engine, such as Lycos, Excite, or Yahoo!, and find advertising information, or have them visit one of the following sites to research information on guidelines for Internet advertising:
   http://www.cni.org/projects/projects/advertising/
   http://www.missouri.edu/internet-advertising-guide.html/
   ftp://ftp.crl.com/users/ro/csharrow/homepage.html/

4. Based on the information found on the Internet and in their research, the students should develop a guide for advertising on the Internet. The guides should include specific guidelines for evaluating Internet advertising, such as:

   - The use of color,
   - The appropriateness of the advertising message,
   - The layout and design,
   - The quality, and
   - The cost, if available.

5. The students should break into groups, and compare their lists. The students should develop a checklist based on group consensus.

6. The groups should present and compare the factors in their checklists. A final class checklist should be compiled for use in Part 2.

Closure

By understanding the purposes and techniques of advertising, students should appreciate the importance of advertising to a company's success. Student should realize the similarities and differences between Internet advertising and other advertising medias.

Part II

Expected Student Learning Outcomes

Analyzing Advertising Media
Use Written Communications in Marketing
Use Oral Communications in Marketing

Anticipatory Set

Continuation of "Part I: Analyze Internet Advertising"
Explore avenues of advertising via the Internet
Evaluate advertisements on the Internet with the guidelines established by the class in Part 1

Objectives

Students will search the Internet for advertising.
Students will evaluate the advertisements using the checklist established by groups in class.
Students will find and rate three good and three poor advertisements on the Internet.
Students will justify their rankings in a written report and through an oral presentation.

Materials Needed

Computers with Internet capabilities
Checklist established by the class in Part I

Procedures

1. Discuss the checklist developed by the class group. As a class develop a rating system. Divide the class into groups and have each group develop a rating form. For instance, a rating form may employ a 1-5 number system, with 5 considered the best and 1 considered the worst. The rating form should reflect the checklist items developed by the class.

2. In groups, have students browse the Internet malls and other areas utilizing Internet advertising. The students may use the addresses listed below or use a search tool to conduct a search or access a predefined business site index.
   http://www.directory.n /
   http://www.internetmall.com/

3. In groups, have students discuss and rate 3 good and 3 poor advertisements, using their rating form. The group must justify their decisions based on the class checklist.

4. Have each group present their ratings in an oral report. Their report could be based on the following questions:
   - What made the group choose their good and poor sites?
   - What one feature stood out as good and/or bad?
   - What kind of consumer is the advertising geared to?

   Have the groups show one address of a "good" advertisement site and a "poor" advertisement site and address the important features of the sites.

CLOSURE

This lesson provided students with an avenue to evaluate the purpose and the effectiveness of advertising on the Internet. Students should realize that the Internet is a new medium of advertising will have increasing significance to the marketer.

START YOUR OWN SMALL BUSINESS

EXPECTED STUDENT LEARNING OUTCOMES

Understand the Private Free Enterprise System
Understand Government Regulations in Marketing Enterprises
Identify Business Risks in the Marketplace

ANTICIPATORY SET

Explore various Internet locations for on-line business information

OBJECTIVES

Students will explain the meaning of the free enterprise system.
Students will learn to develop a business plan.
Students will explain why competition is important to the successful functioning of a free enterprise system.
Students will identify reasons for government regulation of business activity.
Students will describe how the government regulates business activities.
Students will explain the meaning of business risks.
Students will identify the types of risks that businesses encounter.
Students will explain how businesses deal with the various types of risks.

MATERIALS NEEDED

Computers with Internet capabilities
Traditional materials on entrepreneurship

PROCEDURES

1. Discuss the reasons why people start their own businesses. Define and discuss the free enterprise system and its importance to the American economy. What is the role of competition in the free enterprise system?

2. Have your students access the following Internet sites and become familiar with the information found there. Have students find and share at least 1 article or information related to entrepreneurship at each location.

   Business Resource Center
   http://www.kcilink.com/sbhc/

   A Cyberpreneur's Guide to the Internet
   http://asa.ugl.lib.umich.edu/chdocs/cyberpreneur/Cyber.html/

   U.S. Department of Labor
   http://www.dol.gov/

3. Have your students access the Gopher site of the Small Business Administration (SBA) and find publications on developing a business.
   http://www.sbaonline.sba.gov/

   a. Scroll down the SBA home page until you get to the button with the heading "SBA's Gopher Server." Click on the button
   b. Click on the word "GOPHER" in the line "Go directly to Our GOPHER or"
   c. Select the folder entitled "Business Development."

d. Select the folder entitled "General Information and Publications."
e. Review the list of documents. (Any documents listed in this lesson under the heading "SBA Publication" will be found in this directory.)

4. Have your students use a search engine to find overviews and checklists of developing a business plan. (Have them use the keywords "business plan" to conduct the search.) Discuss the steps involved in developing a business plan. Have your students, as individuals or in groups, develop a business plan.

The remainder of the lesson focuses on aspects of planning the startup of a small business.

5. Have your students access the sites listed below, then discuss some of the reasons why naming a business can be a complicated process.

Copyright Guide
http://www.sils.umich.edu/~nancylin/copyright.html/

SBA Publication
"Avoiding Patent, Trademark and Copyright Problems"

The United States Patent and Trademark Office
http://www.uspto.gov/

6. Have your students access the sites listed below, then discuss the different types of possible legal structures of a business.

The 5 Types of Business Structures
http://virtumall.com/CC/structures.html/

Forms of business Organization
http://www.gate.net/~amren/orgforms.html/

The Corporate Agents
http://www.corporate.com/

The Company Corporation
http://www.service.com/tcc/home.html/

7. Have your students access the sites listed below then discuss the legal aspects of hiring and firing employees, writing contracts, resolving business disputes, finding a location for their business, obtaining equipment, and paying taxes.

Oceana's Legal Almanac Series: Law for the Layperson
http://www.oceanalaw.com/textonly/lawlay.htm/

Business and Workplace
http://gnn.com/gnn/bus/nolo/category/business.html/

SBA Publications
"Human Resource Management"

"Management Issues for the Growing Business"

8. Have your students access the sites listed below then discuss the importance of obtaining insurance for a business.

   Business Insurance Specialist
   http://www.ezone.com/bis/

   Insurance by Nerd World Media (sm)
   http://challenge.tiac.net/users/dstein/nw183.html/

9. Have your students access the sites listed below then discuss ways to finance a business.

   SBA Publications
   How to Raise Money for a Small Business

   Financing for the Small Business

10. Have your students collect the most important information they have obtained from their Internet searches for a bulletin board entitled **Steps to Starting Your Own Business**.

CLOSURE

This lesson has helped students understand that starting a business is a complex process. Students have researched the physical, legal, and financial aspects of starting a business. Students accessed the Internet for information on naming a business, choosing a legal structure, researching legal issues, choosing insurance, and obtaining financing. Students have become aware of the breadth of information that a prospective entrepreneur needs to know before starting a business.

Although the content has been modified, this lesson plan originally was researched and developed by Susan L. Jones.

UNIT PLANS
EVALUATE DOING BUSINESS ON THE INTERNET

NOTE: A unit plan necessarily contains a variety of topics and many types of activities and resources that are broader in scope than a lesson plan. In addition, a unit covers a longer period of time. This specific unit plan builds on knowledge and skills of the free enterprise system, types of business ownership, products and services in the marketplace, the marketing cycles, and advertising media. It provides an excellent opportunity to use the search engines on the Internet to access information on these topics; however, sites have been provided for accessing specific information related to doing business on the Internet. Each step in the "Procedures" section represents one or more lessons. You may prefer to present the questions in step 8 to set the stage for the entire unit.

EXPECTED STUDENT LEARNING OUTCOMES

Understand the Private Enterprise System
Develop Specific Products and/or Services for Specific Markets
Understand the Marketing Cycle of a Product
Analyze Advertising Media
Use Written Communications in Marketing
Use Oral Communications in Marketing

ANTICIPATORY SET

Describe the private enterprise system
Use on-line resources to evaluate the effectiveness of doing business on the Internet
Use the information to create an oral and a written report

OBJECTIVES

Students will demonstrate ability to access on-line businesses or information about how a company uses the Internet to do business.
Students will be able to evaluate a company according to specific products or services offered; to apply the marketing cycle of a product; to identify security issues, privacy issues, and ethics; and to analyze the advertising used.
Students will share the information they find in a written and an oral report.

MATERIALS NEEDED

Computers with Internet capabilities
Printed advertisements from a variety of companies

PROCEDURES

1. Discuss the private enterprise system: the meaning of the private enterprise system, the different types of business ownership, the effect of competition on buyers and sellers, and the importance of a private enterprise system functioning successfully.

2. Discuss specific products and/or services for specific markets: the difference between the total marketing approach and the segmentation approach to product planning, and examples of specific products /services and their target markets.

3. Describe the marketing cycle of a product: the functions of packaging to meet the needs of specific marketing, product line and product mix, and the stage of the product life cycle.

4. Analyze the types of major advertising media used to promote sales, the major elements of a printed broadcast advertisement, some promotional material sent out to consumers from a

business and its competitors, the costs of advertising media, and advertising on the Internet.

5. Provide or develop as a class a worksheet for students to analyze doing business on the Internet. The guide should focus on a specific product/service, advertising for the product/service, the targeted audience for the product/service, costs of advertising (if available), and the effectiveness of advertising. Provide a different worksheet for each section of the unit.

6. Have your students use an on-line search engine, such as Veronica, Infoseek, Net Search, or Lycos, or access the sites listed below to find additional resources.

   CommerceNet
   http://www.commerce.net/

   Hoover's Online
   http://www.hoovers.com/

   Branch Mall
   http://www.branch.com:1080/index.html/

   Open Market Inc.
   http://www.directory.net/

   Internet Business Center
   http://home.tig.com/cgi-bin/genobject/index/

   Yahoo! Business Directory
   http://www.yahoo.com/business/

7. Have your students use AskERIC to find and print one article related to topics presented each day of the unit. Specifically, the articles should highlight privacy, security, benefits, ethics, and the potential of doing business on the Internet. Have your students use their articles to write and present a report. The articles should be cited in their written and oral report.
   http://ericir.syr.edu/

8. Have your students present an oral and a written report to the class that answers the following questions:
   - Is it practical and possible to do business on the Internet effectively?
   - What products/services might sell better than others?
   - Who is the intended audience for these products?
   - What are the costs of doing business on the Internet as compared with more traditional ways of doing business?
   - How accessible are the products/services offered on the Internet? To whom are they accessible?
   - How do customers pay for the products/services they order on the Internet? How secure are the transactions?
   - Are there ethical considerations of doing business on the Internet?
   - Who benefits by doing business on the Internet?
   - Would they buy or recommend the product or service?

CLOSURE

After students have completed the objectives of the unit, they should be able to analyze how businesses use the Internet to advertise a product or service. Students should have a broader understanding of the Internet as a part of the private free enterprise system and the marketing cycle of a product on the Internet.

MARKET A PRODUCT ON THE INTERNET
(A Capstone Unit for Advanced Marketing)

NOTE: A unit plan necessarily contains a variety of topics and many types of activities and resources that are broader in scope than a lesson plan. In addition, it covers a longer period of time. This specific unit plan builds on knowledge and skills of doing business on the Internet, marketing research, development of new products and services, advertising media, and the Internet as a marketing tool. It provides an excellent opportunity to use the search engines on the Internet to access information on these topics. Sites have also been provided for accessing specific information related to marketing a product on the Internet. Each step in the "Procedures" section represents one or more lessons.

EXPECTED STUDENT LEARNING OUTCOMES

Conduct Marketing Research
Examine the Development of New Products
Use Oral Communications in Marketing
Use Written Communications in Marketing

ANTICIPATORY SET

Review the lesson "Take a Field Trip on the Internet" for a list of companies doing business on the Internet
Review the products and services in the Internet marketplace
Review doing business on the Internet
In teams, develop a product, research the product, and devise a plan to market the product on the Internet

OBJECTIVES

Students will create a product, research the product's need, and prepare a plan to market the product on the Internet.
Students will know the definition of research and explain the aims and justifications of marketing research.
Students will use the Internet as a source of ideas for a new product.
Students will develop a market survey instrument for their proposed product.
Students will prepare a research report based on the data they gathered.
Students will write a preliminary plan to market their product and present the plan in an oral report.

MATERIALS NEEDED

Computers with Internet capabilities

PROCEDURES

1. Using the lesson plan "Take a Field Trip on the Internet," review the information students gathered about doing business on the Internet. This information should include:
   - Products or services sold on the Internet,
   - Effectiveness of doing business on the Internet,
   - The marketing cycle of a product on the Internet, and
   - The targeted audience for the products or services.

   If necessary, re-access the sites listed in the lesson.

2. Discuss marketing research, including:
   - Identifying a marketing research project,
   - Developing a marketing research design,

- Researching the secondary data resources (use the databases in the Internet: AskERIC, Alta Vista, Infoseek, etc.),
- Designing a survey research instrument based on the product to be marketed on the Internet,
- Applying sampling techniques to identify the same population,
- Preparing a research instrument and gather the data, and
- Preparing and presenting the results of the survey.

3. Examine the development of new products:
   - Identify sources of ideas for new products; in this case, the Internet;
   - Identify the methods of screening ideas for new products;
   - Identify the methods used for evaluating a new product idea;
   - Identify the forms and importance of pre-testing a product prototype;
   - Describe the stages of product development; and
   - Describe the forms of market testing.

4. Analyze advertising media:
   - Major advertising media used to promote sales;
   - Major elements of a print or broadcast advertisement;
   - Promotional material sent out to consumers by a business and its competitors;
   - Costs of advertising media; and
   - Advertising on the Internet: at whom is it aimed, and is it effective?

5. Develop as a class or provide a worksheet for students to use as a guide to devise, develop, and promote a product on the Internet. The guide should include focus on a specific product/service, the need for and marketability of the product on the Internet, advertising for the product/service, and the targeted audience for the product/service. Provide a different worksheet for each day of the unit.

6. Have students use the sites listed below or use a search engine, such as Alta Vista, Veronica, Infoseek, Net Search, or Lycos, to find additional resources. Have students print the articles, advertisements, or other resources they think apply to their product. The article should be cited in their written and oral marketing report.

   CommerceNet
   http://www.commerce.net/

   Hoover's Online
   http://www.hoovers.com/

   The Branch Mall
   http://www.branch.com:1080/index.html/

   Open Market Inc.
   http://www.directory.net/

   U.S. Patent & Trademark Office
   http://www.uspto.gov/

   Small Business Administration (SBA) Home Page
   http://www.sbaonline.sba.gov/

7. Students should prepare a prototype of their product.

8. Students should administer the survey instrument to the appropriate population. The results of the survey instrument should be included in the marketing plan.

9. Students should present their product or service prototype to the class in an oral presentation that includes information on their research and development of the product. The prototypes should be displayed in the classroom with their marketing plan.

CLOSURE

This lesson helped students understand that marketing decisions must be based on all the pertinent information that can be gathered through marketing research. Students will gain a thorough understanding of and familiarity with the Internet as a medium of doing business and the means of using the Internet to successfully market a product, good, or service. Students gained experience in conducting research, determining the need for a particular product or service, and planning to market the product or service.

BASIC EMPLOYMENT UNIT

NOTE: A unit plan necessarily contains a variety of topics and many types of activities and resources that are broader in scope than a lesson plan. In addition, it covers a longer period of time. This specific unit plan builds on knowledge and skills of doing business on the Internet, marketing research, development of new products and services, advertising media, and the Internet as a marketing tool. It provides an excellent opportunity to use the search engines on the Internet to access information on these topics. Sites have also been provided for accessing specific information related to marketing a product on the Internet. ***On Day 5, students will compile the materials gathered in Day 1-4 in a Employment Folder/Portfolio.***

EXPECTED STUDENT LEARNING OUTCOMES

Use Written Communications in Marketing
Complete a Marketing Employment Interview
Identify a Marketing Occupational Objective
Secure a Marketing Position
Secure Advanced Marketing Employment

UNIT OBJECTIVES

Students will compile an Employment Folder/Portfolio to take with them into the workforce.
Students will understand and be able to apply the concepts of searching for a job, writing a resume, excelling in a job interview, and accepting and keeping a job.

DAY ONE

ANTICIPATORY SET

Administer a career interest inventory prior to beginning this unit
Explore careers and job skills on the Internet
Review "How to Compose Veronica Queries"
Explore some "hot" careers and learn where to find one of interest on the Internet

OBJECTIVES

Students will demonstrate the ability to explore specific concepts on the Internet using keywords in a search mode, including Veronica.
Students will discover careers that pertain to their level of ability and interests.
Students will explore current trends in the workforce in the area of career options.
Students will explore the career of their choice, answering pertinent questions to further understand what is required and what is contained in that field.

MATERIALS NEEDED

Computers with Internet capabilities

PROCEDURES

1. Have your students access and read the "How to Compose Veronica Queries" site:
   gopher://veronica.scs.unr.edu:70/00/veronica/how-to-query-veronica/

2. Have your students access the "Tomorrow's Jobs" page of the *Occupational Outlook Handbook* Index site and read about the occupational area they are interested in:
   http://www.espan.com/docs/oohand.html/

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3. Have your students access and print the "Index of Jobs" listed at the University of Missouri-St. Louis site. Students will use them to formulate searches.
   http://www.espan.com/docs/sources.html/

4. Have your students access the site listed below and "Where to Learn About Job Openings" and "On-Line Employment Information." Students are to use this information as a reference during their search.
   http://www.espan.com/docs/sources.html/
   http://www.espan.com/docs/emp.html/

5. Hand out copies of the "Career Exploration Questionnaire." Instruct students to conduct a Veronica search for a job that interests them, and use the Index and Occupation Outlook Handbook site to acquire more information about the job. Students are to fill out the questionnaire and turn it in.

CLOSURE

Students became acquainted with the wealth of job-related resources on the Internet. Students became more familiar with a career that interested them and explore it in-depth. Tomorrow, students will move on to the next step in the job-search process: developing a resume.

DAY TWO

ANTICIPATORY SET

Search for ways to write a better resume. (Refer to "Evaluate Resumes of You Hire!")

OBJECTIVES

Students will further develop their skills in preparing a resume by exploring the Internet using Veronica and Netscape.
Students will enhance their research competence on the Internet.

MATERIALS NEEDED

Computers with Internet capabilities

PROCEDURES

1. Have your students access and read the ERIC document "Employers' Expectations of Vocational Education."
   gopher://ericir.syr.edu:70/11/Clearinghouses/16houses/CACVE/CEDigests/Digest149/

2. Have your students access and read the Important Career Information site:
   http://www.espan.com/docs/index.html#resume/

3. Have your students access and read "Put a Free Sample in Your Resume."
   http://www.careermag.com:80/newsarts.html/

4. Have your students develop a one page resume that is geared toward the career they explored on the Internet. If they should need assistance, students can receive on-line writing help at the following site:

   The Online Writery
   http://www.missouri.edu/~wleric/writery.html/

Closure

Today, students have learned about resumes and what employers are looking for. Students should realize that their resume is a reflection of them and that it provides employees with a first impression. Tomorrow, students will explore the interview process in depth, including using an interview simulator called "You're Hired."

Day Three

Anticipatory Set

Prepare to go on an interview
Research the interviewing process
Conduct an interview with an imaginary but realistic employer

Objectives

Students will acquire valuable interviewing techniques that include preparation, appearance, communication skills, and answering interview questions.
Students will take part in an actual interview with a computer program.
Students will gain confidence in interviewing.

Materials Needed

Computers with Internet capabilities
A downloaded copy of the interview simulator "You're Hired!"

Procedures

1. Download a copy of "You're Hired!" at the URL shown below:
   ftp://garbo.uwasa.fi/pc/database/yh133.zip/

   Please note that when you access the above URL, your computer will start downloading the file. If you are unfamiliar with downloading files, you may want to have your technology specialist help you download the file, or you may want to read the following file before you download:
   ftp://garbo.uwasa.fi/pc/UPLOAD.INF/

   Also note that the "You're Hired!" file is a "zip" file, and it will need to be "unzipped" once it has been downloaded. If you do not have an unzip program, you may access one at the following URL:
   http://www.scescape.com/software/win/comp.html/

2. Have your students access the following sites to gain information about the interview process:

   Important Career Information-Interviewing
   http://www.espan.com/docs/index.html#inter/

   "Interviews: How to Answer Some of Those Awkward–and all too Common–Questions"
   http://www.careermag.com:80/newarts/interviewing/1039.html/

   Interviewing Articles
   http://www.careermag.com:80/newsarts.html/

   "Communication Strategies for Employment Interviews"
   http://gopher.indiana.edu:2002/eric_rec/gopher/ericdigs/olddigs/d70/

3. Have your students access the downloaded copy of "You're Hired!" to participate in a simulated interview.

4. After the students have finished with their interview, have them write a one page essay on what is the hardest question to answer and why. In their essays, students should include information on how they think the program "You're Hired!" will help them excel in the interviewing process.

CLOSURE

Today, students refined their interviewing skills by answering common and difficult questions asked in interviews. Tomorrow, students will continue their walk through the process of employment by exploring the facets of accepting a job and keeping it.

DAY FOUR

ANTICIPATORY SET

Evaluate a job offer
Explore Internet sources to get information on how to keep a job

OBJECTIVES

Students will learn to evaluate job offers by weighing the pros and cons of each offer.
Students will explore the Internet even further by delving for sources that will help them keep the job they have worked so hard to get.
Students will become more computer literate in terms of using the Internet as a tool to help them in everyday life.

MATERIALS NEEDED

Computers with Internet capabilities

PROCEDURES

1. Have your students access and read "Evaluating a Job Offer" from the Occupational Outlook Handbook site:
   http://www.espan.com/docs/sources1.html/

2. For the rest of the class period, have your students search either Gopher or Netscape for relevant information about keeping a job. Keywords might include: communication, practical writing for employment, getting along with co-workers, and customer relations. Have the students make full use of the search options in Gopher and Netscape. They should turn in a printed copy of the information they download.

CLOSURE

Students have explored and evaluated sources on how to get and keep a job. Tomorrow, they will use the information to create an Employment Folder of Portfolio.

DAY 5

ANTICIPATORY SET

Examples of Student Portfolios or Employment Records
Material and Information collected during Day 1-4

OBJECTIVES

Students will select a format for their employment record or portfolio.
Students will select and arrange the items developed during this unit for their portfolio.

MATERIALS NEEDED

Computers with Internet capabilities
Examples of student portfolios or employment records
Material and information collected during Day 1-4

PROCEDURES

1. Since each student will select, access, and print different items for his/her portfolio or employment records, each portfolio will be unique. Provide time for students to assemble their portfolios for presentation.

2. Put the portfolios on display for other students, teachers, parents, and/or administrators.

3. As an alternative evaluation, ask the business members on your Advisory Committee to evaluate the portfolios for hiring purposes.

UNIT CLOSURE

Students became familiar with the employment process by researching their career choice, preparing a resume for a job in their chosen career, participating in a mock interview, evaluating and accepting and job offer, and exploring the aspects of maintaining employment. Students will prepare themselves for employment by preparing an employment folder that will help them obtain employment.

Although the content has been modified, this lesson plan originally was researched and developed by Jennifer Strausser.

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CAREER EXPLORATION QUESTIONNAIRE

Using the various resources available on the Internet, search for a career that interests you and answer the following questions.

1. What does a(n) _____ do on the job?

2. What courses in high school and college should you take to become a(n) _____? Why?

3. Does a(n) _____ have to become certified or licensed to get a job? What is the advantage of certification, if any?

4. What advantage does work experience give a(n) _____ when applying for a job, if any?

5. What are the tasks you would enjoy performing as a(n) _____?

6. What are the tasks you would ***not*** enjoy performing as a(n) _____?

7. What is the labor market need for _____ in your local area?

8. What is the pay range of a(n) _____ in your local area?

9. How often does a(n) _____ have to retrain or upgrade his/her skills to keep a job?

10. Why would you consider becoming a(n) _____?

INTERNET RESOURCES
INTERNET ADDRESSES USED IN THE GUIDE

Abbreviations/Emoticons

http://www.bigeasy.com/~pbreslin/smiley.html/ 56
http://www.organic.com/1800collect/Emoticons/ 56

Advertising

ftp://ftp.crl.com/users/ro/csharrow/homepage.html/ 99
http://www.cni.org/projects/advertising/www/adpaper.html/ 99
http://www.directory.net/ 100
http;//www.internetmall.com/ 100
http://www.missouri.edu/internet-advertising-guide.html/ 99
http://www.webcom.com/ 39

Bulletin Boards/Discussion Groups/Listservs

ftp://ftp.nic.surfnet.nl/surfnet/net-management/earn/services/ 64
ftp://rtfm.mit.edu/pub/usenet/news.answers/mail/mailing-lists/ 36
gopher://dewey.lib.ncsu.edu/11/library/stacks/acadlist/ 4
http://boutell.com/%7Egrant/web-groups.html/ 10
http://prism.k12.nj.us/WWW/OII/disc-pub/novae-group/index.html/ 36
http://prism.prs.k12.nj.us/WWW/OII/disc-pub/novae-group/0105.html/ 36
http://www.earn.net/lug/notice.html#contents/ 64
http://www.liszt.com/ 4
http://www.naples.net/remote/zrbbs.htm/ 41
http://www.neosoft.com/internet/paml/ 4
http://www.tile.net/tile/listserv/ 4
http://www.users.interport.net/ 61
http://www.wwa.com/ 61
listserv@idbsu.idbsu.edu (e-mail) 36
listserv@msu.edu (e-mail) 4
news.k12.ed.business (e-mail) 4

Business Information

gopher://gopher.nijenrode.nl/ 39
gopher://johnnymac.harvard.edu/ 42
gopher://nysernet.org/ 83
gopher://refmac.kent.edu/ 39
http://asa.ugl.lib.umich.edu/chdocs/cyberpreneur/Cyber.html/ 103
http://challenge.tiac.net/users/dstein/nw183.html/ 105
http://gnn.com/gnn/bus/nolo/category/business.html/ 104
http://home.tig.com/cgi-bin/genobject/index/ 83, 108
http://virtumall.com/CC/structures.html/ 104
http://www.branch.com:1080/index.html/ 108, 110
http://www.commerce.net/ 108, 110
http://www.corporate.com/ 104
http://www.directory.net/ 100, 108, 110
http://www.dol.gov/ 103
http://www.ezone.com/bis/ 105
http://www.gate.net/~amren/orgforms.html/ 104
http://www.hoovers.com/ 108, 110

http://www.kcilink.com/sbhc/ 103
http://www.library.usyd.edu.au:80/Guides/Government /index.html/ 83
http://www.internetmall.com/ 100
http://www.oceanalaw.com/textonly/laylay.ht/ 104
http://www.sbaonline.sba.gov/ 103, 110
http://www.sec.gov/edgarhp.htm/ 92
http://www.service.com/tcc/home.html/ 104
http://www.sils.umich.edu/~nancylin/copyright.html/ 104
http://www.uspto.gov/ 104, 110
http://www.yahoo.com/business/ 108
http://www.yahoo.com/News/Usenet/ 92

Companies

http://openhouses.com/ 40
http://sam.wal-mart.com/ 92
http://www.att.com/ 92
http://www.branchmall.com:1080/index.html/ 78
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ONLINE ETHICS: WHAT'S A TEACHER TO DO?

BY: CAL CARPENTER

(Originally printed in *Learning and Leading With Technology*, March 1996)

The National Information Infrastructure (NII), more commonly known as the Internet, is rapidly expanding around the globe and bringing unprecedented interpersonal opportunities to students and teachers whether they be from elementary schools or universities. As a teacher with the Lesley College Graduate School Computers in Education Program, I come into contact with K-12 educators from around the country who are eager to join the online community of the Internet.

As with any young community, however, problems with crime and antisocial behavior from those who lack moral principles are present on the Internet and must be dealt with by those who seek educational opportunities. Due to the spiraling growth of network traffic and the increase of potentially serious problems, businesses, individuals, government offices, and educational institutions have all begun to address ethical issues from their own perspectives. Legislation, codes of conduct, and moral precepts have been suggested as means of keeping the network civilized. A stable moral code for the new technology of interpersonal communications needs to be established for educators. Educators at all levels should initiate and model a standardized role of ethical behavior for all Internet users.

THE STATE OF THE NET

The recent dramatic growth of the Internet is seen by some as a "feeding frenzy" and by others as a fulfillment of the prediction of technology's impact on society. The exponential growth of the World Wide Web (WWW) has been one of the most significant aspects of the Internet's growth. Bournellis (1995) notes that the Web was introduced in 1992 and began its rise in 1993. The maintainers of the *Web Cruiser* search tool conducted a count finding that 38.796 Web servers were in use at the end of June, 1995. Graumann (1994) states that American is moving steadily toward a national communications system capable of carrying many times the volume of information flowing today.

At present, however, the same technology that has brought society so many benefits has crated a new criminal element: the hacker. The crimes are varied, but the goal is always the same--the hacker abuses the available technology to gain entry into a secure computer system. Once into a system, a hacker may engage in a number of crimes, such as damaging programs, changing or erasing memory, stealing information, and transferring funds. Hanson (1991) has described some of the tools hackers use.

- **Phreaking**–Hackers engage in illegal activities having to do with phone lines and accounts. By accessing a company's 800 system or by transferring billing information to another account, phreakers area able to use the phone system without payment.
- **Virus**–The virus is a computer program containing instructions that copies itself onto, or infects, another program. When triggered, a virus may replicate itself, taking up memory.
- **Logic Bomb**–This type of virus may be destructive in nature, causing system failures or deleting files from memory. It may be set to trigger on a specified date or when the infected program runs a particular function.
- **Worm**–A worm is much like a virus in that it will infect a system or program by copying itself and then move on. Unlike a virus, a worm does not attach itself to a program; it remains independent.
- **Trojan Horse**–This is a program that appears to serve some useful purpose but secretly contains a destructive bit of programming code. While one is using the program, such as a popular game, the hidden Trojan horse may be erasing memory or damaging files. Unlike a virus, the Trojan horse does not replicate itself.

BEST COPY AVAILABLE

The criminal element in the society of cyberspace is a concern for all members of the community. As user awareness and preventive measures grow, the current problems that frequent the Internet may eventually be replaced by a new renaissance of intellectual development guiding our society into the next century.

Piracy, Privacy, and Security Issues

Most of today's industrial felons do not engage in their criminal behavior with guns or crowbars; they commit their crimes with computers, modems, and loopholes in security systems. Businesses and the appropriate authorities are working to stop the criminal hacker, but they are almost helpless against the millions of software pirates who "steal" from companies by duplicating programs and giving them away to their friends and colleagues. The Software Publishers Association (1993) in Washington, D.C., states that in 1991, the year of the most recent statistical analysis, the software industry in the United States lost an estimated $1.2 billion due to piracy. Most who pirate software, especially educators, do not consider their actions criminal. Teachers often rationalize illegal duplication as the only means to cope with under funded and overcrowded classroom situations, or believe they are making "fair use" of a product in order to bring technology opportunities to their students.

Copyright laws are designed to protect the intellectual property rights of individuals and are based on Article I, Section 8, of the United States Constitution. These laws are becoming blurred when applied to the Internet. Sivin and Bialo (1992) state that while there is a firm sense of right and wrong when it comes to fair sue of physical property, the fair use of computers and related technology often involve the idea that information is property, and we are often confused about how to regard non-print information. To compound the problem, copyright laws vary greatly from country to country, and the global nature of the Internet allows a user to access information in many countries at one sitting.

But just because a file is available on the Internet doesn't mean that taking it is legal. Making sense of these complex issues is difficult, and trusting our intuition regarding what is ethical and legal is not always the best path to follow. Sivin and Bialo (1992) contend that it is up to educators to become informed about the relevant legal and ethical issues and provide the guidance students need throughout their education.

Privacy in the Information Age is evolving into a technology oxymoron. The gathering and sharing of personal information has become a common practice for business and government. Pillar (1993) indicates that the advent of telecommunications, the growth of centralized government, and the rise of massive credit and insurance industries that manage vast computerized databases have turned formerly modest records into an open forum of data available to nearly anyone for a price. While the United States Constitution does not specifically guarantee personal privacy, Americans have come to believe that their privacy rights extend to their personal mail. But can we expect the right to privacy to extend to our private electronic mail? This is an issue that has particular ramifications for education.

Educators must make their students aware that the security of electronic mail is particularly low. Krol (1994) explains that e-mail messages may be read intentionally, as by system operators, or by mistake, as in the case of a computer-routing error. For example, messages that were thought to be deleted may reappear years later as a result of system backup. Since e-mail can be traced to its originating machine, proper conduct and ethical activities online must be instilled in users from the outset of telecommunication use. Freedom to use the mail resources of the global Internet must be tempered with common sense and good judgment.

Screening Electronic Sites

In speaking of electronic networks, Vice President Al Gore has said, "To accommodate all the uses for which a free and democratic society needs a national electronic network, the network must be built by the federal government and managed for the benefit of all. It is as much a right for a citizen in this country to use such a national network as to breathe the air and walk the public streets." While many Internet users agree with the democratization of the network, however, metaphorically speaking, the air and streets of America's online networks are not without their own set of problems.

In 1995, Congress passed the Communication Decency Act, which calls for government regulation of the Internet and commercial online services. Total government control of the network will have its detractors. Many believe that full implementation of such regulations constitutes censorship and conflicts with First Amendment rights.

The controversial nature of some material on the Internet often attracts the most attention for the general public. One example is *Time Magazine's* expose of pornography in cyberspace (Elmer-Dewitt, 1995) which spurred government concerns to protect innocent children from the evils of the Internet. Blamed for playing a role in everything from kidnappings to the terrorist attach in Oklahoma City, the Internet has been portrayed as a villain by those who wish to control it. However, another movement that is gaining momentous seeks not to regulate the Internet but rather find ways to develop controls that parents and teachers can use to keep children away from adult-centers areas of the Internet. Individual computer-based programs such as *SurfWatch* and *Net Nanny* can be used to monitor the information being accessed on the Internet and block transfers from sties carrying offensive material. The list may be amended by parents or teachers. Another program, *SafeSurf* ensures child-safe Web sites by encoding "safe" home pages with an identifiable coding, which in turn are linked to other approved sties. Whatever the method, it is important for parents and teachers to establish ground rules for online use. The global capabilities of the Internet and its use by all students and teachers is reality that educators are confronting more and more.

Ethics Education and the Internet

As the Internet expands to all aspects of community life, education remains the first line of defense against unethical attitudes that can grow into criminal behavior. Beginning in elementary schools, students and teachers should be exposed to appropriate ethical behavior for using the Internet. To promote proper attitudes about online activities teachers should:

- Establish a clear set of expected behaviors.
- Make each concept real to anchor understanding.
- Model appropriate behaviors.
- Reinforce proper behaviors and attitudes.

Generally, each host service that connects students posts a list of expected behaviors, do's and don'ts, or network etiquette, commonly called netiquette. The list varies according to local system operators and institutional requirements; however, themes of responsibility, respect, and e-mail management tend to dominate. Some host services and institutions, such as the Cleveland Free-net and Colgate University, require network users to sign ethical compliance forms in which the users agree to uphold established values and behaviors while connected to those resources. Many other institutions--Boston University, Columbia University, James Madison University, Michigan State University, and Purdue University, to name just a few, -- post their ethics codes online as models for others to examine.

Ethical issues are complex. A list of rules is not adequate to help enhance a student's understanding until the concepts behind them become real. Sivin and Bialo (1992) state that schools can take action on technology ethics on two fronts: 1. Setting school policy that provides a model for students to follow and 2. Incorporating technology ethical issues into the curriculum. It is through the creativity and resourcefulness of the teacher that the issues may be integrated into the curriculum.

Topics to Explore

Dealing with ethical issues related to using a network is not necessarily easy. Discussions have been successful in some situations, role playing in others. Sometimes the local news or a school event offers a spark to introduce as issue. The key is to allow the student to internalize the concept by experiencing the issue in the focused light of reality. Generally, there are a number of theses that can be the focal point for discussions or role playing:

- Theft of information. This includes intellectual property and the right of authors to their material.
- Theft or destruction of property. This includes criminal hacking as well as spreading viruses and making unauthorized entry into commercial online services.
- Piracy. Students should be informed about issues related to making illegal copies of software.
- Privacy. Privacy issues involve accessing private information about people, businesses, or organizations without permission.
- Access to technology. This category includes issues of gender, ethnicity, and economic differences that impact access.

As technology expands through all facts of society, so too should the training that will establish a broad awareness of acceptable activity.

An Ethics Model

Educators play a central role in bringing order to the new frontier of electronic networking. As educators learn and accept new paradigms, standard codes of behavior for proper use of the Internet, and technology in general, will be developed, taught, and modeled throughout a student's education. The following 10 rules might serve as a set of guidelines and help generate a discussion of ethics in the use of the Internet and related technologies.

1. Be responsible in your use of the network.
2. Respect the rights and privacy of others.
3. Respect the property of others.
4. Respect authors' rights to their ideas.
5. Be honest and law-abiding in online activities.
6. Assume that your e-mail is public.
7. Don't use vulgar or offensive language.
8. Before downloading material to disks, check for viruses.
9. Monitor how much memory your Internet acitvity uses.
10. Follow the netiquette of your host computer.

Our awareness about proper Internet use is growing, but only when our actions rflect a proper ethical attitude will society be able to attain the full potential that is evolving technology offers.

(Cal Carpetner, 38 DUnster Road, Bedford, MA 01730; CalCarpent@aol.com;calcarp@tiac.net)

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Pillar, C. (1993, July). Privacy in peril: How computers are making private life a thing of the past. *MacWorld*, 124-130.
Sivin, J.P., & Bialo, E.R. (1992). *Ethical use of information technologies in education; Important issues for America's Schools* (DOJ Publication No. OJP-91-C-005). Washington, DC: U.S. Government Printing Office.

Software

Use these Web addresses to obtain more information on the following screening software.

Net Nanny
http://www.netnanny.com/netnanny/

SafeSurf
http://www.safesurf.com

SurfWatch
http://www.surfwatch.com/surfwatch/

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◆ ***Helpdesk*** defines Internet terms for you. When you see a diamond ◆ next to a word refer to the box at the bottom of the page.

Archie and friends help you search the Internet

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These li… …

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…an …use any of five online searching tools. They are called Veronica, Jughead, Archie, the World Wide Web (WWW), and WAIS. We'll describe WAIS in a future issue.

VERONICA

Searching gopher databases by keyword

Veronica is the premier search tool for the Internet's 4,800-plus ◆ **gopher** databases. Veronica searches for items by keyword from gopher menus around the world.

Let's say you were interested in finding information about biology. First, log on to the Internet. Start your gopher software or type **gopher** at the prompt. Then enter **veronica.scs.unr.edu** as your destination. This is Veronica's home site.

First, a ◆ **main menu** appears. …ect *Search ALL of Gopherspace (4800 servers)* …*Veronica* from the list. A menu of …nt main searching ◆ **servers** …ound the world will appear. It doesn't matter which site you use. All will return the same information.

To start your search, select one of the sites. Enter **biology** as the keyword, and hit enter. If one site is busy and denies you access, go back and select another. When Veronica finishes searching, it presents you with a single gopher menu of items containing that word. You can select each entry and be instantly transported to the computer with the information.

You can give Veronica several keywords at once to narrow the search. Using **biology** as the keyword returned more than 2,000 individual items. Searching for **molecular biology** turned up half as many.

◆ **gopher:** Allows users to browse database menus and read and retrieve files on computers on the Internet.
◆ **main menu:** The first list of items a user can select from a site.
◆ **server:** A remote computer with information accessible via the Internet.

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Why are some Net searching tools named after comic book characters?

Credit the brilliant college kids who wrote these helpful programs. They liked the names Archie, Veronica, and Jughead so much that they picked these names as acronyms. Then they wrote

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Inside this issue:
• Lesson plans online. Page 3
• Grants and funding. Page 4
• Internet educational resources. Page 5
• Best of the Web educational sites. Page 7

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CHATTING *with the world*

Internet Relay Chat puts students online in real time

Anyone who has tried a commercial online service such as America Online knows that one of the most popular features is the "chat" room.

Chat rooms give people sitting at their computers the amazing capacity to type messages that other users see on their computer screens—instantly. Conversations are held in real time, as if the person is in the room with you. Instead of talking, people type one sentence at a time back and forth to each other, but as many as 20 people can be involved at once!

The Internet has its chat rooms too, only they're larger—each can accommodate hundreds of users at once—and more free-wheeling. These chat rooms are accessed via an Internet tool called the Internet Relay Chat, or IRC. Instead of different rooms, IRC has different "channels." Each channel is a separate conversation which Internet users can join.

Before you purchase or download and install IRC software, try the chat functions on one of the commercial online services such as America Online Prodigy. Be aware, however, that IRC ot be quite as user friendly as chat n the commercial services.

12 schools

interesting possibilities far K-12 educators ut using it. annels are so Students as if

But with organization, planning, structure, and supervision, teachers and students can do amazing things with the global, real-time conferencing IRC makes possible. Here are a few examples of things a class can do:

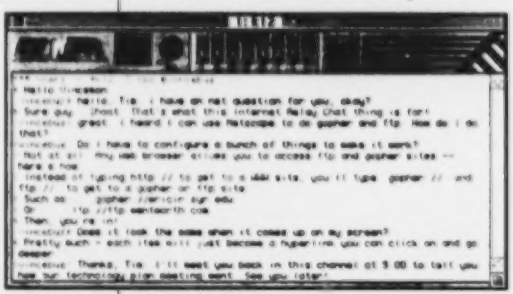
- Communicate in real time with other students, keypals, or partner classes anywhere in the world.
- Conduct online conferences with other teachers and schools.
- Locate and query experts in a particular field.

Navigating IRC requires that the users have a certain comfort level with typing commands—and that they are able to type almost as fast as they speak. IRC is not for the faint of heart.

How to get on IRC

You can try IRC in one of two ways. If you access the Internet graphically (**◆SLIP or PPP connection**), then you can use programs such as Homer (Mac) or WINIRC (PC) channel. Y for yo addr IRC Car

If **◆text-** you'll nee join real-time telnetting to a serv type **IRC** at the prompt o from a menu of available Internet



This is a IRC conversation between "Vincebus and "Timba" —IRC nicknames—on the K12 channel.

options. Follow the on-screen instructions for using that site's IRC software. You'll be asked to pick a nickname to use during your IRC session, or one will be assigned to you.

I went back to the search screen and tried again, this time using just "Twain:"

What a find! A whole page of links to resources on Mark Twain filled the screen, including ftp sites with the full text of his works and a research paper discussing media portrayal of Clemens.

I selected an entry called TWAIN-L and discovered that it's a mailing list "for a scholarly interest in the Twain." It even **Email to:**

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Lesson plan goldmines

Use the Internet to find the instructional materials you need

The Internet is home to thousands of lesson plans and new sites crop up all the time. Most of the lesson plans *do not* use telecommunications, so they're helpful to all teachers regardless of whether they're online.

To find the following lesson plans on the Internet, you will need to use gopher, ftp, or a ◆ **World Wide Web browser**. When we tell you to "look in" or "go to" certain areas, we're telling you which ◆ **menu** items to select to reach the lesson plan.

Stock Market

This activity helps high school students understand the workings of the stock market, identify the major factors that affect it, and learn how to invest in selected stocks. The only material required is the week's stock listings from the local newspaper, three student volunteers to act as brokers for the class, a calculator, and a class "bank" of fake money. Students invest their "money" in several stocks, then track their portfolios' gains and losses using the stock listings.

Gopher to: ericir.syr.edu
Look in *Lesson Plans, Social Studies, Economics: Learning about the Stock Market*

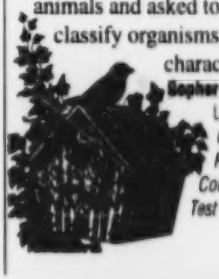
News on the Net

Need a fresh way to introduce fifth or sixth grade students to the Internet? This telecomputing lesson plan challenges them to dig up sources of local and national news on the Net, then to compare it with traditional news sources such as the local newspaper.

URL: http://www.dpi.state.nc.us/Curriculum/Computer.skills/Issspins/Telecomputing/tctoc.html

Plants and animals

Young science students must classify into groups common plants (flowering, non-flowering; deciduous, coniferous) and animals (invertebrates, vertebrates) in this lesson plan. Students are given illustrations, models, or descriptions of plants and animals and asked to identify them and classify organisms that share common characteristics.



Gopher to: bigcat.missouri.edu
Look in *School House, Columbia Public Schools, Resource Library, WISE-Columbia Library, Key Skills with Test Items, Grade 5, Science 5A1*

Teaching with the Net

Two lesson plans that get students online

SOLAR SYSTEM

■ **GRADE LEVEL:** 6-7

■ **OBJECTIVES:**

- Use the Internet to find information about the solar system.
- Make a scale model of the solar system, including the planets and their relative sizes and distances from the sun.
- Practice using telnet, ftp, and World Wide ◆ **Web browser** Internet tools.

■ **MATERIALS**

- Personal computer with an Internet connection, including telnet, ftp, and Web access
- Graphics-capable printer
- Paper, string, tape, and a tape measure

■ **PROCEDURE**

1. Prepare a chart listing the planets and their diameters and mean distances from the sun. Telnet to NASA's SpaceLink for the information to complete the chart.

Telnet to: spacelink.msfc.nasa.gov
Login: **guest**
Select the *Instructional Materials* menu

2. Record
the sun,
model o
to determi
each planet accord

3. Have students make a scale drawing of each planet, including a label with its name and diameter. Cut out each drawing.

4. Using the drawings, make a scale model of the solar system showing how far each planet is from the sun. Set the distance from the sun to Earth as one meter, then use proportions to figure out the distances of the other planets.

5. On a large bulletin board or empty wall, position the sun model on the far left. Cut a piece of string to scale so it represents the distance between the sun and Pluto. Place the model for Pluto at the end of the string, then place the other planets in their respective positions along

ach of the
ing on the scale
may have to go outdoors to
set up your model.)

■ **EXTENSIONS**

1. Find images of the planets on ftp sites and the World Wide Web.

◆ **Download** and print the images. Place the actual images next to their respective planets on your model.

Ftp to: iris1.ucis.dal.ca
Go to the *pub/gif* subdirectories

URL: http://info.cern.ch/hypertext/bySubject/astro/Overview.html
Click on *Databases, Images and* at this site is *The Nine Planets Solar System by Bill Arn*

2. Visit Com
Information
informati
URL: htt

Classroom Connect's Lesson Plan Goldmines make it easy to integrate the Internet into the classroom. Find unique, innovative plans in no time. Plus, every issue also includes two timely ready-to-use Lesson Plans.

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Grants for school telecommunications

Where to get the money your school needs to connect to the Internet

No one can overemphasize the importance of thorough preparation before requesting funds from foundations or corporate grant givers.

To maximize your chances of getting the money your school needs, use this checklist of questions frequently asked by grant givers. Prepare concise, well-organized responses before picking up the phone to make a call.

- How did you dete… needs? Wha…
- H…
- Wha… parents or the community can you expect?
- How do you plan to continue the project after grant funds are exhausted?

Grants: Every school needs funding for technology projects, and *Classroom Connect* delivers detailed information on the latest grant opportunities, plus proven tips on how to successfully apply for the money you need.

IBM Classroom Technology Centers Program

Industry giant International Business Machines offers millions of dollars in grant funds every year for programs in math, science, and professional development. Of …

…w bulletin board service (BBS) provides access to the latest news in grants and fund raising trends and techniques. The service includes pointers to grant opportunities, updates on government grant regulations, and information about private foundations and corporate giving programs. For new users, Cybergrants is free for a limited time.

Modem: (703) 768-3471

GrantsNet

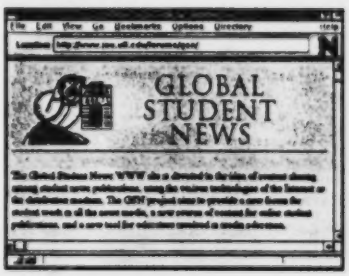
Billed as the "information hub for federal …rants information," this gopher site has a …lth of information for educators seeking …nts from the U.S. government. Menu …ms include Program and Funding Availability; Laws, Regulations, and Policies Affecting Grants; Grants-related Resources; and Calendar of Events.

Gopher to: alpha1.csd.uwm.edu

Look in *Remote Information Services, US Government Gophers, GrantsNet*

GLOBAL PROJECTS

Global Student Newswire (GSN)



Initiated by journalism students at the University of Florida, this project brings together student journalists in high schools and colleges around the world to share ideas and content for their publications. They create a worldwide ◆ **hypermedia** news service for the Internet and establish a publishing forum for students involved …th reporting, editing, news photography, etc. Internet …onents include mailing lists or online "bureaus" for … story traffic; a GSN newsgroup for critiquing and …ews items; ftp, gopher, and WAIS components for …les and images; and Internet Relay Chat f… …iews and conferences.

…edu/forums/gsn/

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Paul Eckberg, Project Coordinator
Box 150
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(308) 473-3195
Email to: debate@neink.mste.org

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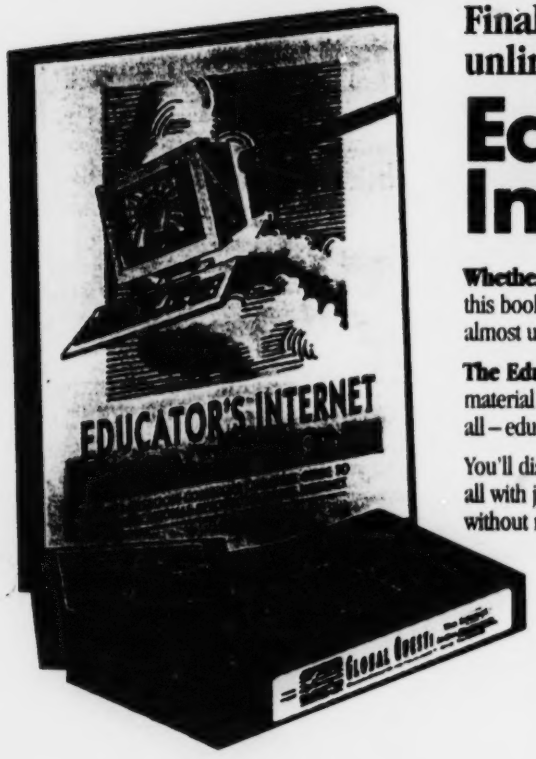

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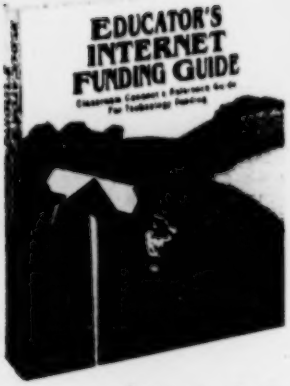

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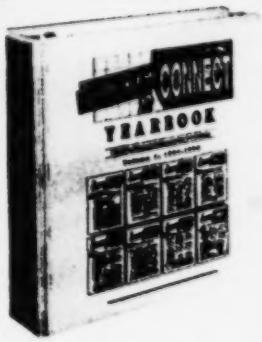

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Visit each Web site in multimedia full-color – including sound and video! Multiple active hyperlinks allow you to sample each site's contents – it's like having the Internet at your fingertips without even going online! As an added benefit, a World Wide Web browser is included on the CD.

All grades and major subject areas are covered in this graphical TourGuide...

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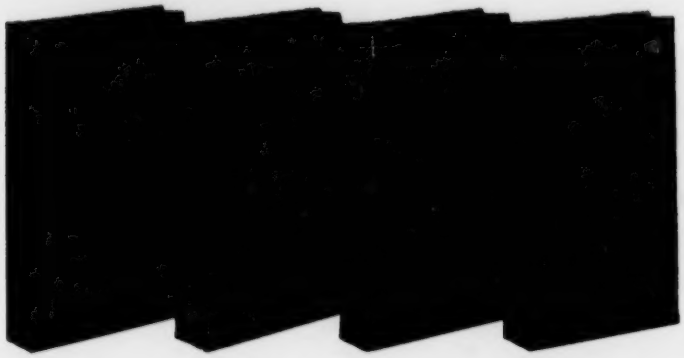
Internet made easy in the classroom

8450 G D E S

A complete visual guide to the educational Internet for students and teachers.

The Internet Revealed Videotape Series



This landmark videotape production quickly delivers an A-to-Z understanding of what the Internet is and how to tap its unlimited educational resources. It's the one place teachers and students can turn for a thorough orientation and how-to-do-it instructions that get the beginner online. Tim McLain, nationally known writer/surfer for *Classroom Connect*, is your host for this easy-to-understand series of four top-of-the-line, movie-quality video productions. Tapes can be viewed as a series or individually in any order.

TAPE 1: **The Amazing Internet** gives teachers and students a taste of the tremendous global teaching and learning power of the Internet. It introduces all of the communication, research, and navigation tools and the phenomenal World Wide Web. Captures and holds interest from start to finish! Approximate running time 20 minutes.

TAPE 2: **Internet Email** is the most versatile and commonly used communications tool. Here are clear step-by-step directions for using the power of electronic mail to join over 4,000 global discussion lists, collaborate on international projects, and communicate with teachers and students worldwide. Approximate running time 30 minutes.

TAPE 3: **Searching the Internet** teaches hands-on navigation skills and valuable searching techniques. Quickly and easily, learn to unlock the treasure trove of educational resources on the Internet. Includes gopher, Archie, Veronica, Jughead, principles of Boolean searching, and much more. Bonus section on WebCrawler, Lycos, Yahoo, and other World Wide Web search engines. Approximate running time 30 minutes.

$150
(for complete 4 videotape set)

TAPE 4: **Discovering the World Wide Web** opens the door to an incredible wealth of educational information. It's an up-to-the-minute teaching and learning tool of unparalleled scope. Easy-to-follow, step-by-step instructions show you how to navigate the Web and turn you into a World Wide Web power user. Plus, a 20-minute tutorial on using NetScape is included. Approximate running time 55 minutes including NetScape tutorial.

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(for each individual tape)

Internet Basics for Educators Seminar

Discover how to use the Internet in the classroom. Tap into the incredible educational resources on the Internet – in less time than you ever imagined! The presentation is clear, understandable, jargon-free – and jam-packed with immediately applicable information.

Tony Brewer
Director,
Seminar Program

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Internet Educational Resources

Classroom Connect's *guide to educational Internet sites.*

France and French Language

A link to all things French, this World Wide Web site is maintained by a major university in France. It features pointers to practical information about traveling throughout the country, hyperlinks to popular tourist attractions such as the Louvre, language tips, and much more. A must visit for K-12 students studying French.

URL: http://web.cnam.fr/fr/

Grolier's Encyclopedia

The online Academic American Encyclopedia, published by Grolier Electronic Publishing, is the equivalent of a 20-volume printed encyclopedia. This telnet site contains more than 30,000 general interest articles covering the humanities, science, and the social sciences, as well as sports and contemporary life. A rich source for biographies, the database is updated quarterly and can be searched with keywords.

Telnet to: victor.umd.edu

Login: **PAC**

Select *5. VT100* as your terminal type. Then go to *4. Categories of other libraries in the state of Maryland, 94. Baltimore County Public Library, 4. Information Databases, 48. Grolier's Encyclopedia*

CHAT Project

The Conversational Hypertext Access Technology (CHAT) telnet site is an online, natural-language program that allows users to ask questions (in English) of a computer-generated person or animal and receive answers. The program is part of an ongoing research project to examine the nature of human-computer interactions. Be sure to chat with the dragon named Maur and fill out the questionnaire

Shadowy Science Projects

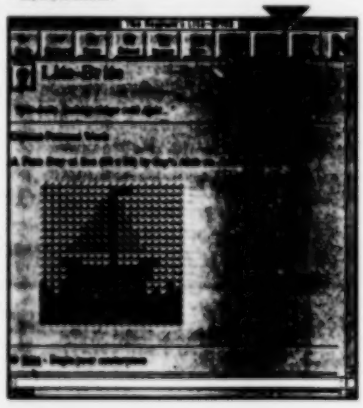
A gopher database of discussions, articles, and projects featuring the sun, shadows, the Earth's rotation, and more. Hands-on classroom projects include: Measuring Shadows, My Favorite Season, Seasons are Like Boomerangs, Path of the Sun, Shapes of Shadows, and When Will the Sun Explode?

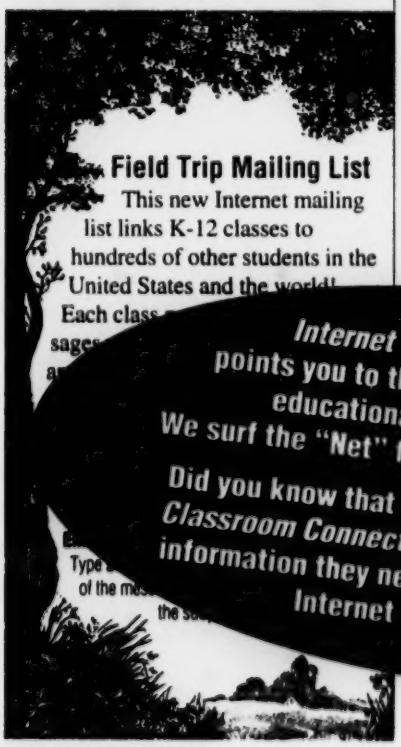
Gopher to: ralphbunche.rbs.edu

Lite Brite Online

A fun, educational World Wide Web site for students in preschool to grade three. Students can draw their own online pictures by placing colored pegs in a simulated Lite Brite screen. The pictures can be printed or saved to disk. Children can also browse a large database of some of the best pictures created at the site.

URL: http://www.gaicit.caltech.edu/~ta/lb/lb.html




Field Trip Mailing List
This new Internet mailing list links K-12 classes to hundreds of other students in the United States and the world!

Media Literacy Project

The Media Literacy Project's go... ite disseminates information a... ers to Internet resource... tors interested in... nic media on... Menus i... onal e... w... fi... print... mail... m...

Internet Educational Resources points you to the best and most interesting educational sites on the Internet. We surf the "Net" full time—so you don't have to!

Did you know that 42,000 teachers already trust *Classroom Connect* to give them the easy-to-use information they need to get the most out of the Internet in the classroom?

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Intercultural Email Classroom Connections (IECC)

This Web site permits educators to search past postings to this mailing list to find partner classrooms in other countries. Visitors can use a form to submit their requests for partner classes or to obtain assistance with email projects. It also has links to related mailing lists and other WWW resources.
URL: http://www.stolaf.edu/network/iecc/

Lesson plans for students with mental disabilities

A colleague in a grades three to six elementary school in Bloomington, Indiana, is looking for information and lesson plans for using the Internet with special education students. She is especially interested in schools with peer tutors working with students with moderate mental disabilities.
Contact: Carl Zager
Email to: south11@silver.ucs.indiana.edu

Science and math resources

The SAMI (Science and Math Initiatives) Web site offers information on grants, funding sources, software resources, curriculum ideas, and links to other sites. Of special note is a student/teacher Internet use contract that has been used for four years in one school district—and that has the backing of the local district attorney.
URL: http://www.c3.lanl.gov:5060/SAMI-home

Storm Water Grate Project

My middle school students in Baltimore, Maryland, are surveying the world community about storm water grate design. Please identify your city and country when you reply to these questions: 1) What do storm water grates in your area look like—mesh, grid, parallel bars, open (or closed) at curb? 2) Does the design allow passage of solid waste, or is the design helpful in trapping paper, leaves, etc.? 3) Does surface water pollution increase after a heavy rain?
Contact: Bert Ross
Email to: robross@umd5.umd.edu

Monarch Butterfly Migration Project

Students in grades 4-12 across North America can track the northward migration of the monarch butterflies from Mexico to eastern North America. The project, sponsored by ...ey North, runs from February un... vacation. For $15, teachers ...acher's guide and a reusable ... for the classroom, which ...s and activities.
...way
...s

Canadian Postcard Project

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Email to: Re...

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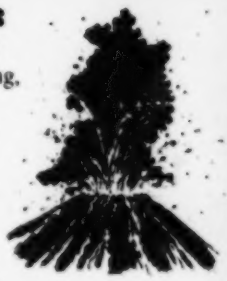
CT MEETING PLACE

Seeking disaster stories



My seventh grade Reading Improvement classes in Lansing, Michigan, are researching famous disasters. They would like to write to students who have experienced a hurricane, an earthquake, a flood, a fire, an oilspill, etc.

Contact: Gloria Elsea

Email to: gelsea@isd.ingham.k12.mi.us

Kobe Earthquake Web Site

This site describes the scope of a tragedy that left almost 5,000 people dead. Teachers covering topics such as earth science, physics, social science, economics, government, and city infrastructure can use this resource to teach real-life lessons.

URL: http://www.msen.com/~emv/kobe.html

Dirt Bag Project

For its geology unit, our fifth grade class in Los Osos, California, seeks dirt samples from around the world. Send a spoonful of earth from your community and we'll send you a spoonful of ours, along with a description of our community.

Contact: Rich Guenther

Email to: MonGroveES@aol.com

Any Math Day ideas?

Our K-3 school in Del Valle, Texas, is planning a "Math Day" this spring. Ideas and suggestions are welcome.

Contact: Karol Christena

Email to: kkc@tenet.edu

Postcard

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... your bulletin board for online projects
... teacher contacts from around the world!

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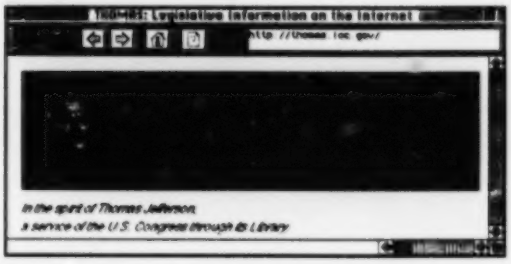
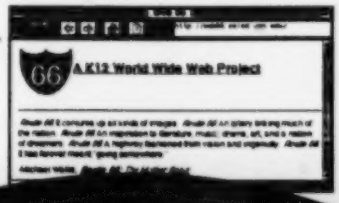
Web sites worth visiting


Legislative Information on the Internet
In the spirit of Thomas Jefferson,
a service of the U.S. Congress through its Library

Thomas Web

The U.S. Congress has launched its long-awaited Thomas Web site with access to the full text of all 1993-94 and recent 1995 House and Senate bills, including summaries and chronologies of pending legislation; the *Congressional Record*, updated daily; email directories for House and Senate members and committees; and C-SPAN transcripts and broadcast schedules. The site is a must visit for educators and students studying the U.S. government and the legislative process.

URL: http://thomas.loc.gov/



Web 66

Web 66 is a one-stop source for all the software and information needed to set up a World Wide Web server at school. The site includes the official *Classroom Internet Server Cookbook*, with recipes for setting up a [illegible] which are sample ◆ **HTML** pa[illegible] pages of pointers to Web-[illegible]

Email to: sec@boombox.[illegible]

URL: http://web66.coled[illegible]

The Hub

This Web si[illegible] science teach[illegible] hyperlinks t[illegible] math and sc[illegible] publishing r[illegible] proposals for[illegible] the *Hubbub* n[illegible] about the site's [illegible]

Email to: hub-staff@[illegible]

URL: http://hub.terc.edu/[illegible]

Teachers rave about our coverage of exciting Internet educational *World Wide Web sites*—you will too!

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Humans in Space

Can human beings live and work in spa[illegible] NASA's long and short answer to the question. Perfect for students in middle school and above, Humans in Space is an online, in-depth exploration of the physiological, environmental, and psychological aspects of sending astronauts into orbit. Includes a long list of questions to test students' knowledge of the subject matter.

URL: http://medlib.jsc.nasa.gov/intro/humans.html

◆ **HTML (Hypertext Markup Language)** A coding system that puts computer files into a format that enables them to be mounted on the WWW.

◆ **GIF and JPG** Two popular formats for computer graphics files.

"WANTED"

Your school's Web page on our Web site—free!

Classroom Connect's staff has added a special place on our Web site for K-12 educators to mount Web pages from their schools—free of charge.

Our "ClassroomWeb" is a great way for schools to show the world what their students and teachers are doing with Internet technology. Many students make Web pages as part of school projects, but have no place to put them online for the rest of the world to see. Many teachers tell us that their schools don't have Net-connected computers or the money to place Web pages online.

Any school can submit one 8 1/2-by-11-inch page, formatted in HTML, with [illegible] ◆ GIF or JPEG [illegible] page (50k [illegible] Send your pa[illegible] disk or by email to [illegible] worth Worldwide [illegible] dia [illegible] page two).

[illegible]weetworth.com

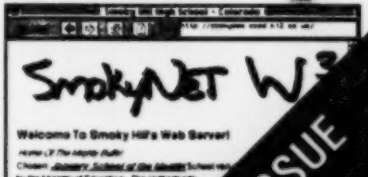
[illegible]ge in the subject line. Put your [illegible]'s name, address, phone [illegible]dress in the message.

[illegible]e first 100 Web pages [illegible] special directory on our [illegible]essible via this Internet [illegible]

[illegible]ww.sweetworth.com/classweb/

[illegible]more information about Class-[illegible]mWeb or how to get your Web pages mounted there, contact Tim McLain.

Email to: tmc@sweetworth.com



From Osaka, Ja[illegible] in Colorado[illegible] best on [illegible] can [illegible]

SAMPLER ISSUE
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Take a virtual tour of college campuses

When it comes to deciding which college or university to attend, nothing beats actually visiting a school. But if time or money are constraints, try an online tour instead.

Dozens of institutions now host graphical Internet sites with facts about the school and academic programs, scholarships, pictures of campus buildings and landmarks, library indexes, sports schedules and updates, and online student bookstores. Here's a sampling.

Carnegie Mellon University
URL: http://www.cmu.edu

Harvard University
Gopher to: gopher.harvard.edu

Illinois State University
URL: http://www.ilstu.edu

Ohio State University
URL: http://www.acs.ohio-state.edu

Rice University
URL: http://riceinfo.rice.edu

Temple University
URL: http://astro.ocis.temple.edu

University of Alaska
Gopher to: info.alaska.edu

University of Chicago
URL: http://www.uchicago.edu

University of Illinois College of Medicine
URL: http://www.med.uiuc.edu

...iversity of Kansas

...ts.cc.ukans.edu/cwis/kufacts_start.html

... Memphis

...ed/memph-home-page.html

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Welcome to The Princeton Review
If you're looking for information on the college or graduate school admissions process, you've come to the right place
The Princeton Review

College prep online

Sites for high school counselors and students

The guidance office is the source of college prep information for millions of high school seniors. Now it's time for it to go online so staff and students can tap the growing amount of electronic information about colleges, which have been in the forefront of Internet development.

Commercial services

Commercial online services are full of well-organized college prep materials. America Online features a... searchable versio... *Handbook*, a... 3,000 colle... College St... prep mate... of AOL's ... **Learning & Re... College Board O...**

Prodigy also h... college-bound stud... bulletin board addressi... admissions testing, financia... fraternities and sororities, campus ... working students, and dorm living. Jump to **college bb**, and click on **Choose a topic** to see the complete list of discussion items.

CompuServe offers access to *Peterson's College Database*, a storehouse of information for 3,500-plus accredited colleges around the world, including admissions, financial aid, and entrance requirements. Click on the **Reference** icon from the main menu, then **Peterson's College Database**. Also available are student (GO: students) and education (GO: edforum) forums loaded with information files about colleges and universities.

The Internet

The Net offers SAT and ACT preparation materials through the ERIC Internet database. You'll find free brochures for ...rents about the SAT and ACT, complete ...here and when the SAT is ...d sample questions. ...house on ...ma... schedules for where and when the SAT is being offered, costs, and sample questions.
Gopher to: gopher.cua.edu
Select *Special Resources*, then *ERIC Clearinghouse on Assessment and Evaluation*.

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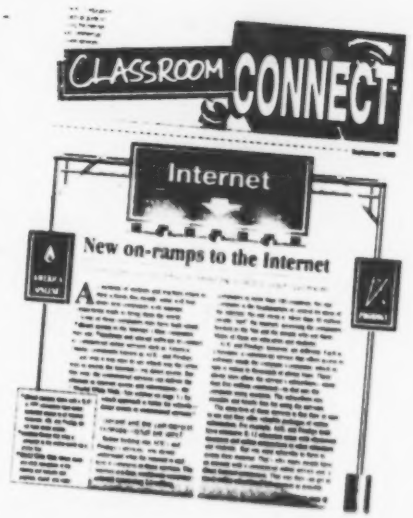
- Students with disabilities



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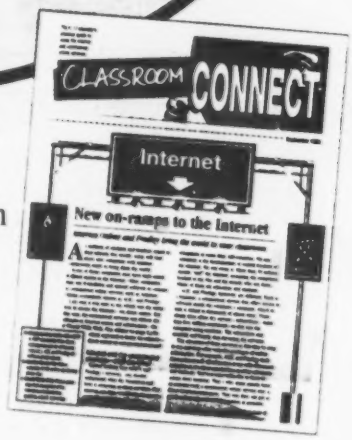

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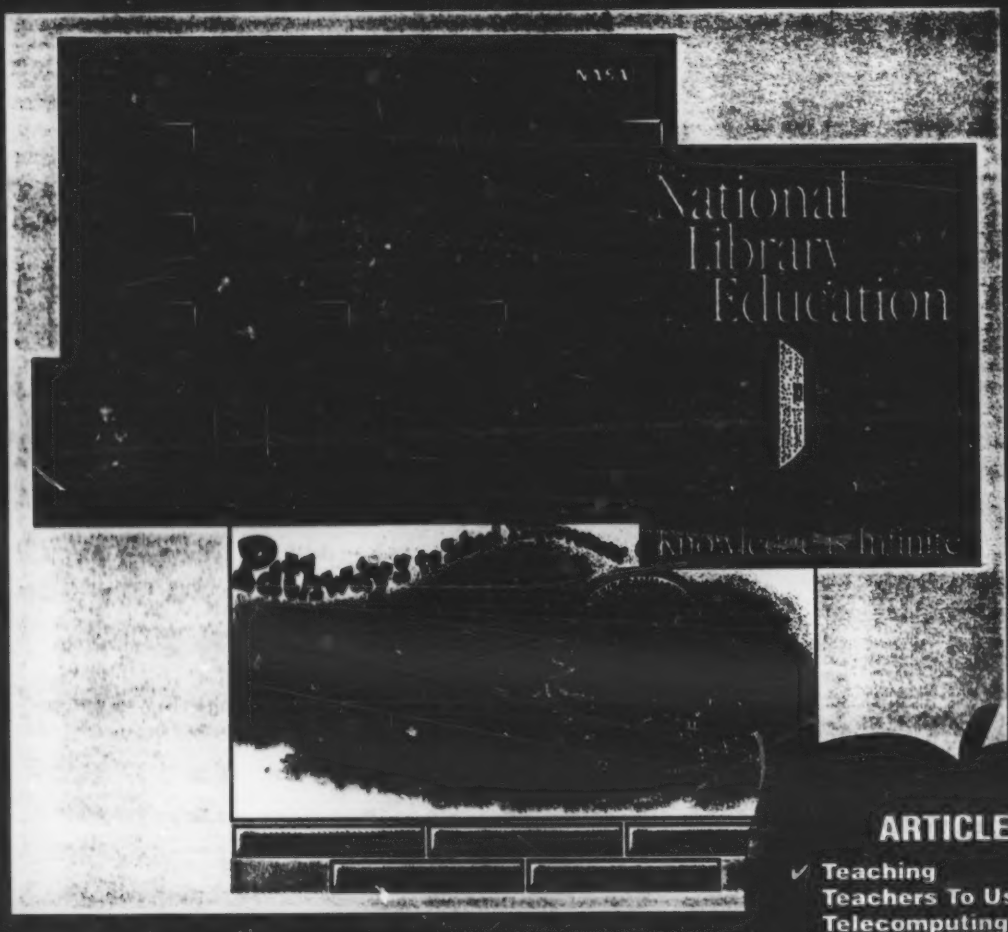
K–12 COMPUTER NETWORKING



Educational Resources Information Center

ARTICLES

- ✓ Teaching Teachers To Use Telecomputing Tools
- ✓ Classrooms Online... A Teacher Tells You How To Get Started

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An Important Message to Our Readers

In the three years since we first published an issue of *The ERIC Review* devoted to K–12 computer networking, interest in the topic has grown tremendously among educators, parents, and community members. ERIC's role as an information provider on the Internet and various online services has also expanded significantly. Each week, more than 500 people send e-mail to the AskERIC question-answering service; another 25,000 visit the AskERIC Virtual Library, the National Parent Information Network, and the subject-oriented Gopher and World Wide Web sites maintained by many ERIC Clearinghouses. And those numbers keep growing!

The National Center for Education Statistics estimates that nearly half of the nation's public schools have access to the Internet or another wide area network such as CompuServe, America Online, or Prodigy.[1] Sixty-seven percent of public schools have plans to implement or upgrade a wide area network.[2] Although connecting to the online world is an important first step, it's what you do when you get there that has the potential to improve teaching, learning, and education decision making.

This issue of *The ERIC Review* is intended to help teacher educators, administrators, librarians, adult educators, and individual teachers introduce others to education resources on computer networks. It includes information about how teachers can learn to use telecomputing tools, a first-person account about what happens when a teacher begins incorporating telecommunications in her classroom, and guidelines to help schools create policies for Internet use. You'll also find a glossary of network terms, reading and resource organization lists, an overview of federal telecommunications initiatives related to education, and complete access information for ERIC-sponsored network sites. Keep in mind that computer networking is a rapidly growing and evolving field: access methods improve and new sites open up all the time. This issue should thus be taken as a starting point rather than the final word on education-related networking. If a Gopher or World Wide Web address listed in this issue appears to have changed, please contact the host organization.

The materials in this journal are in the public domain and may be reproduced and disseminated freely. If you'd like more information about what the Educational Resources Information Center has to offer, details on how to access the database, or a referral to one of the 16 subject-specific ERIC Clearinghouses, please call 1–800–LET–ERIC, send e-mail to acceric@inet.ed.gov, or browse the ERIC system's new Web pages (http://www.aspensys.com/eric2/welcome.html).

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[1] References in this publication to commercial services or products are for information purposes only and are not to be construed as an endorsement by the U.S. Department of Education.

[2] *Advanced Telecommunications in U.S. Public Schools, K–12.* (February 1995). Washington, DC: U.S. Government Printing Office.

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THE ERIC Review
Educational Resources Information Center

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The ERIC Review, published by ACCESS ERIC with support from the U.S. Department of Education's Office of Educational Research and Improvement (OERI), announces research results, publications, and new programs. It also contains information on the Educational Resources Information Center (ERIC), its subject-specific clearinghouses, and support components. The ideas and opinions expressed in this publication do not necessarily reflect the positions or policies of the Department of Education or OERI.

For more information about ERIC or a free subscription to *The ERIC Review*, call ACCESS ERIC toll free at 1–800–LET–ERIC.

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Your Education Information Network

The Educational Resources Information Center is a nationwide information service designed to make education literature readily accessible.

The ERIC system consists of 16 subject-specific clearinghouses, several adjunct clearinghouses, and support components, including ACCESS ERIC. At the heart of ERIC is the largest education database in the world—containing 900,000 abstracts of documents and journal articles. Curriculum materials, papers, conference proceedings, and literature reviews, along with abstracts of articles from nearly 800 education-related journals, can be found in the ERIC database.

You can access ERIC at more than 3,000 locations around the world. Typically, university, state, and large city public libraries offer access to ERIC through their microfiche collections and online or CD-ROM searches. The ERIC database is also accessible through some computer networks.

In addition, documents selected for the database are abstracted and announced in ERIC's monthly journal, *Resources in Education*. The full text of most documents announced in ERIC is available in microfiche or paper copy from the ERIC Document Reproduction Service, 1–800–443–ERIC. ERIC announces journal literature in a separate monthly publication, *Current Index to Journals in Education*.

ACCESS ERIC reference staff can answer questions about the ERIC system and its services and products, and refer you to the clearinghouses, which contain vast subject expertise in various fields of education.

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THE ERIC Review

Teaching Teachers To Use Telecomputing Tools

by Judi Harris

Are you a teacher's teacher? If you are traveling the information highway, chances are good that you are already teaching other teachers to use telecomputing tools, either formally or informally, or you are planning to do so soon. The Internet is a huge decentralized network of networks that currently serves more than 13 million users and encompasses more than 2.5 million hosts worldwide. It is growing at the rate of approximately 100 percent per year, changing literally minute to minute. To use the Internet for both professional development and instructional purposes requires constant accommodation to rapid change, successful use of varied interfaces, and tolerance for ambiguity. You can't teach these problem-solving skills, but you can assist in their development with appropriate instruction to willing participants. This instruction usually takes one of the following forms:

■ ***Independent Learning***. Many teachers have learned to use telecomputing resources with little assistance. Teaching yourself is probably the most time-consuming and frustrating way to learn networking skills, however, because of the highly ambiguous and changing nature of the Internet and the cumbersome characteristics of some of its procedures.

■ ***Independent Learning With Remote Assistance.*** Most teachers who currently use Internet tools have learned to do so by applying patience, persistence, and good problem-solving skills both independently and with help from more experienced network enthusiasts. This is the most prevalent, but not necessarily the most efficient, model for learning to use telecomputing tools.

■ ***One-to-One Coaching***. Some teachers are lucky enough to work with a more experienced "Internaut" who provides them with informal individual training. As communities of telecomputing teachers develop, this very effective learning model will become more commonplace.

■ ***Large-Group Demonstration With Independent Practice***. This model is often employed in the early stages of a school's or district's adoption of telecomputing innovations. Demonstrations of Internet resources and tools are typically made to large groups of teachers and administrators. This model is more effective for marshaling support from decision makers than for helping teachers to use the Internet.

■ ***Large-Group Demonstration With Assisted Practice***. This model, an improvement on the previous idea, can be effective both in convincing decision makers to support the infusion of telecomputing tools into education and in helping teachers to make use of these tools. However, it is generally not as successful as the following three models.

■ ***Hands-On Lab, Intensive Schedule.*** It is not surprising that teaching teachers to use new computer-mediated tools in a hands-on, collaborative context, in which brief demonstrations are followed immediately by assisted exploration of the procedures demonstrated, is often the most effective model for telecomputing training. Teachers' schedules, however, limit the time available for such hands-on experiences. This method often uses an intensive schedule (for example, several half-day or full-day sessions on Saturdays).

■ ***Hands-On Lab, Paced Schedule.*** Spreading hands-on training evenly over several months of Internet work is preferable to planning intensive labs because teachers can then practice what they learn before encountering the next new skill or resource type. It is difficult, though, to ensure that teachers finish between-meetings work, given the many professional and personal demands on their time. It helps to structure participants' expectations before they agree to begin training.

Judi Harris is on the faculty of the Department of Curriculum and Instruction, University of Texas at Austin. This selection is adapted from her "Mining the Internet" column in the October 1994 issue of *The Computing Teacher*, published by the International Society for Technology in Education.

■ ***Hands-On Lab, Paced Schedule With Structured Online Activities.*** Although this model is the most effort-intensive option for telecomputing trainers, it is often the most effective. If highly interactive, hands-on sessions offered at regular intervals in lab settings are supplemented by structured, motivating online activities that participants have committed to complete and be responsible for, online communities of networked teachers can emerge. Whether these communities continue to function after training activities end depends upon the extent to which participants truly adopt telecomputing innovations. The success of this training model in helping teachers develop transferable and longitudinal Internetworking skills can be seen in the growing popularity of online courses.

It is important to remember that different conditions of access, purpose, and support for telecomputing will greatly affect your choice of an appropriate training model. The models described above are offered as an array of possibilities, not as a hierarchy of recommendations. They are also admittedly unfinished. New models will emerge as more teachers and students learn to use the Internet. New tools will require new techniques for training, incorporated into new models of teaching and learning.

Tips for Teaching Teachers

Drawing upon my years of work with teachers who have learned to use Internet tools and resources for professional development and instruction, I offer the following tips on teaching teachers to use telecomputing tools.

■ Ensure teachers' access to telecomputing tools before attempting to teach them how to use these resources. If possible, provide easy access both at school and at home.

■ Provide teachers access to all types of Internet resources, including electronic mail, computer conferencing such as newsgroups or electronic

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Teaching Methods and Technology

The field of education is being influenced by a new understanding of how we learn and new applications of technology to teaching and learning. Allan Collins, a noted cognitive psychologist, has identified the following eight shifts in teaching methodology supported by research in cognitive psychology. Each of these changes can be facilitated by technology.

■ **A shift from whole-class to small-group instruction.** New research shows a dramatic decrease in teacher-led activities when computers are used, from 70 percent to less than 10 percent.

■ **A shift from lecture and recitation to coaching.** New research also shows an increase in the class time teachers spend serving as facilitators (rather than directors of behavior) when using computers, from 20 percent to 50 percent.

■ **A shift from working with better students to working with weaker students.** In traditional classrooms, teachers most often interact with brighter students who raise their hand; they frequently ignore slower students to avoid embarrassing them. With technology, that pattern is reversed; slower students receive two to four times more attention from the teacher.

■ **A shift toward more engaged students.** A number of studies have demonstrated that students who work with computers become more involved in their studies, often to the point of fighting over computers between classes and after school.

■ **A shift from assessment based on test performance to assessment based on products, progress, and effort.** Teachers have traditionally relied on end-of-unit tests for assessment. Technology shifts the focus of assessment from tests to progress on projects and to the final product of students' efforts.

■ **A shift from competitiveness to cooperation.** A number of researchers have noted greater mutual assistance among students when using technology.

■ **A shift from all students learning the same things to different students learning different things.** A number of studies have shown how technology can support students as they tackle various parts of a complex project, each contributing to a larger final product. Technology helps students maintain focus and manage information as they work on separate aspects of a problem.

■ **A shift from the primacy of verbal thinking to the integration of visual and verbal thinking.** Visual media—television, film, and computers—are beginning to compete with abstract text as the primary means of learning in our day. Lectures, multiple-choice tests, and recitation of knowledge become less relevant when technology-based alternatives are available.

Many teachers go through identifiable stages on their way to becoming experienced technology users. In the early stages, they use computers to support traditional methods of teaching such as drill-and-practice, text orientation, whole-group lectures, and seatwork. Later, as teachers gain confidence, they use technology as part of more innovative instruction, including team teaching, interdisciplinary project-based instruction, and individually paced instruction. Finally, they enter an inventive stage in which they experiment and change, using technology to support active, creative, and collaborative learning.

From *Technology Making a Difference: The Peakview Elementary School Study* (1994) by Brent G. Wilson, Roger Hamilton, James L. Teslow, and Thomas A. Cyr. Syracuse, NY: ERIC Clearinghouse on Information & Technology.

bulletin boards, direct Telnet connections to remotely located information resources, file transfer capabilities to and from anonymously accessible file archives on the Internet, Gophers and related tools such as Veronica, and, if possible, World Wide Web tools such as Netscape and Mosaic (multimedia) and Lynx (text only).

■ Use a telecomputing trainer who is part of the existing social system of the school or district. Make sure he or she is available for ongoing, long-term support of telecomputing adventures and is seen as a colleague rather than the local computer guru.

■ Introduce new users to electronic mail (for private or small-group communications) and computer conferencing (for public and large-group communications) first. Although as a trainer you may be most excited about getting information resources into the hands of your teacher-students, remember that they may feel most comfortable using those tools that most closely resemble communication forms with which they are familiar, such as the letter and the bulletin board or committee meeting. Also, it is important that new telecomputing teachers understand the most efficient uses of differing tools so that they will use those tools appropriately.

■ Introduce Gophers, Telnet sites, FTP archives, and World Wide Web tools later, as interests dictate. Remember that teachers' successful use of telecomputing tools will be highly individualized and reinvented. There is a much better chance that teachers will use Internetworked tools and resources in powerful and ongoing ways if they are ready to use a new technique when you introduce it and are motivated to use it for self-determined purposes.

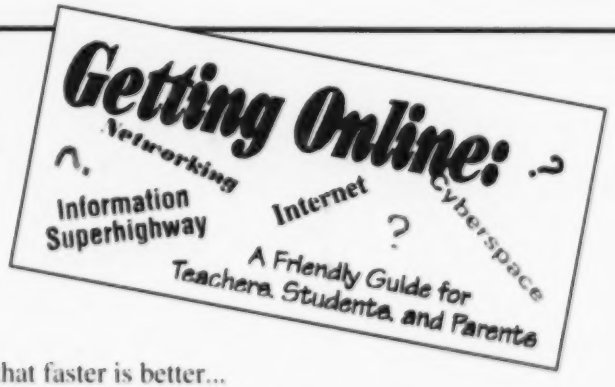
■ Make clear, friendly, paper-based, user-developed documentation amply available to trainees. There is no better teacher (or document writer) than another, slightly more experienced teacher. Be cautious of adopting documentation written by technical specialists and be willing to coordinate the ongoing revision and updating of participant-created documentation.

■ Provide structured, enjoyable online activities for practice of skills learned in face-to-face, hands-on sessions. Remember that adults are receptive to playful learning environments.

■ Fully support those teachers most motivated to explore the Internet, allowing use to grow in grassroots patterns. At the same time, do not mandate participation in telecomputing training sessions. Make sure that there is support from your school, district, and state decision makers.

At a minimum, you'll need the following to access a network:

- A personal computer,
- A modem,
- Communications software, and
- An account with a network provider.



The important thing to know about modems is that faster is better...

For more telecommunications basics, call 1–800–LET–ERIC to request a free copy of *Getting Online: A Friendly Guide for Teachers, Students, and Parents.*

THE ERIC Review

Classrooms Online: How One Teacher Got Started

by Bonnie L. Bracey

I have been working online from the classroom for several years. My initial online experience came in a program sponsored by the U.S. Department of Education that linked teachers in the Washington, D.C., area with each other and with other teachers learning how to use technology in other parts of the country. The host computer was at Stanford University in Palo Alto, California. We sent a few messages back and forth to other schools. One school sent us an impressive graphic holiday message.

Teachers in my school were excited and felt very special to be able to participate in the program. At the time, we had a school account rather than individual accounts. Because most of our computer work was done in the library after school, we did not get much online experience.

First Classroom Application

After sending e-mail to other teachers, I began investigating classroom applications. My next involvement was with the National Geographic Kids Network, a telecommunications program that features real science, geography, history, statistics, and math applications. I had been participating in a summer institute at National Geographic, and I had access there to a room to try out software. I had never before had the opportunity to just learn and work with a program on my own time.

After training, I signed up for the Kids Network "Hello" program, an introductory program based on local geography. The program gave students and teachers time to get online and get familiar with all the icons. I started with gifted and talented students in a 4th- and 5th-grade combination class. We had to know the longitude and latitude of our communities, and we developed an outline to describe them. I quickly instituted peer tutoring and used some stations to distribute information about maps and the geography of our city, Arlington, Virginia. I gathered every kind of map I could find to share with the students, along with resource materials about the region. I also secured an atlas for each student and visited the U.S. Geographical Service to get topographical maps and additional information about Arlington.

Using these resources, the students did "mind maps," or idea explorations of Arlington, and prepared drawings of their routes from home to school. I wanted to see what they considered significant enough in their neighborhood and community to show to others. This approach personalized the lesson—typing and thinking about their home community shook off my students' lethargy. It was neat to have them calling the Chamber of Commerce, collecting newspaper items, and asking questions of parents and friends. Children using the networks for the first time had a goal that could be easily accomplished and help was right at their elbow. I would sometimes see little faces glued to the windows as the class worked. Some students came in and did the work even though they were students in English as a Second Language (ESL) classes.

When I first saw the Kids Network "Pets" program, I was not very interested. I thought it was too simplistic. Boy, was I wrong. When I had a chance to try the program myself, I discovered that it was easy to use, had well-written lessons, and could be personalized. I decided to try it in the classroom.

We defined and talked about all kinds of pets. We learned that some people in the country had peacocks and goats for pets. We heard from a class in Vancouver about a cougar that had to be shot because it was trapped in a woman's bedroom. Then, so soon, the

(continued on page 6)

At the time of this writing, Bonnie L. Bracey was an elementary teacher in Arlington, Virginia. She is now helping other teachers adopt technology in the classroom through her position at the Arlington Career Center. In 1994, she was selected as a member of the National Information Infrastructure Advisory Committee.

telecommunications time was up, and after that, something was missing in our instruction.

The kids prepared wonderful portfolios that included letters, data charts, graphs and statistics, creative writing, and art. They organized their own folders, adding pictures or poetry, the characteristics of various types of pet owners, cartoons, and very detailed essays about pets. We even added pet songs to our plate of things connected with the network program. This type of learning was very interesting to them. Even when we went off line, some students continued to use the software to learn more, to write, to print out maps, and to create documents and graphs.

Effects on Students

Our second National Geographic Kids Network program was on acid rain. It was during this unit that I found out how much the students enjoyed the empowerment and interaction the network gave them. When it was time to move on to a new topic, the students were not interested. They wanted to pursue the acid rain issue, so we arranged our science fair to be mostly about projects on pollution and acid rain.

When we moved to a class project called Future Think on Prodigy, we entered a writing contest. Benj, then a candidate for special education based on a motor disability for writing and problems following through on projects, decided to write about acid rain. I remember thinking that acid rain was probably not quite the topic they wanted, but Benj wove the tale, wordsmithing his concerns for the future so well into the essay that I did not say a word. He worked and worked on the document. I even got excited about it. After awhile, though, I stopped thinking about the contest. After all, teachers and kids enter lots of contests. Then the announcement came—Benj had won second place in the country. The contest was not restricted to elementary students, so the award was a powerful statement of Benj's ability to write. He chose as prizes a computer for himself and one for me, the very one I write on now.

I signed up for and got all the available Kids Network projects, and we continued to do "real" science. We even translated the Kids Network packages into Spanish. Occasionally, I got in trouble because students would not want to leave the classroom to go to their ESL or instrumental music classes, but the other teachers supported what I was doing and we worked the problems out.

"Going online in the classroom changed me as a teacher. I was no longer the authority, I was a colearner, and the students seemed to respect me even more and to love learning."

Effects on the Teacher

A classroom like mine is not your typical row-oriented classroom. The motivating factor for our seating is the learning that will be taking place. No one sits silently. No one pretends to be participating while dreaming of the time for the bell. In fact, I sometimes have to ignore all kinds of little pleas from students who want to come in ahead of the group to do special things on the computer. But because we have a lot of students who are in the building from 7 a.m. to 7 p.m and have their homework time squeezed, I sometimes let them come in early to do research online.

Going online in the classroom changed me as a teacher. I was no longer the authority, I was a colearner, and the students seemed to respect me even more and to love learning. In this type of teaching, we made big steps, decisions, and mistakes together. It built a community of learners.

A Sample Lesson in a Wired Classroom

I start my typical day in a "wired" classroom by checking out all the machines. I set the stage for learning and make sure the materials the students need for the day's work are in place or photocopied.

I try to integrate the subjects I teach in thematic units. For example, I've used the Jason project from National Geographic, Electronic Data Systems, and the National Science Teachers Association, which combines core curriculum from the social studies, science, and geography with telecommunications work and experiments. I like to create an enriched atmosphere by weaving together books, centers, software, and multimedia presentations. If hands-on materials are available, I add them.

For the Jason project on Belize (a country in Central America bordering on the Caribbean), I asked a parent to videotape relevant programming from the Discovery Channel and used some lessons on the Maya from *Voyage of the Mimi*, an educational show. I got posters from the embassy and borrowed a tarantula and a scorpion (not live) from a colleague in the junior high. I displayed a collection of coral on a vibrant, ocean-patterned piece of cloth. The learning centers were stocked with rocks and minerals typical of Belize's topography (irregular limestone with sinks, underground streams, and caverns), as well as with coral reef posters and samples, books, and software. We made collages of coral reefs, the Maya, and neotropical rainforests, and incorporated creative writing and additional hands-on projects.

Students kept track of what had been accomplished on a chart. They put red stickers on the chart to get help, tutoring, or answers to special questions. The children particularly enjoyed an activity involving two fruits that allowed them to be neotropical botanists. They described each fruit's appearance and drew pictures of it, then cross-sectioned and longitudinally sectioned it. They also counted seeds, weighed the fruit, made the identification in a resource book, and tasted it. The "Plants" program from the National Geographic and the "Amazon Trail" program from the Minnesota Educational Computing Consortium were available on computers for groups or individuals to use.

While conducting these activities and experiments, we talked to other classes online about what we were doing. We sometimes accessed Learning Link from the Public Broadcasting Service (PBS), for example, and went online to show what we were doing and to find out what experiments others were doing. Sometimes we shared our writing, our concerns, and our disappointments. For example, during the fruit activity, the kids were not enamored of the papaya, but the students to whom they were writing told them ways to prepare it and how it is used in ethnobotany. An Earthwatch participant told them how she gathered papayas from the yard of the home in which she was working.

To support my online classroom, I've also used our state network, Virginia's PEN. I have driven all over the state with friends to help teachers learn to access Virginia's PEN, and I use America Online, mostly because there are lots of people who have not forded the creek to the Internet and I want to be in touch with both audiences.

Getting Started on the Internet

While on Prodigy, I often observed long discussions about the Internet and would participate in them, but when I asked how to gain access to the Internet, no one could tell me. Maybe they didn't want to tell me that I would have to pay for it or know someone to get a free account. I was not in touch at the time with university people or taking a course at a university, so access was going to be a problem. Virginia's PEN was what was offered in my area without cost, so I did not make further inquiries about the Internet, especially after someone told me it was for university types. I had noticed that the business cards of most university people had an Internet address. I figured it was a perk.

I also thought using the Internet would be hard. A friend of mine who was a Christa McAuliffe educator used the Internet. He was so interested in it that once he got on, he was essentially not in the same room. I mean he was there, but gone. I knew all the wonderful things he was doing, but I did not have a clue as to how to start myself. Words like NASA's Spacelink and Gophers were in my vocabulary, but I still did not have access. Jim would show me what really great opportunities the Internet offered, and he provided a book to help me, but I needed an account. I finally got one when I was appointed to the National Information Infrastructure Advisory Committee.

In all grades K through 12, there are constant interruptions from the loudspeaker, from people wanting access to your classroom, from students and parents who have questions, and from children walking in and out for specialized lessons. While I was learning the Internet, there was a new schedule on top of that. I decided to learn in the quiet of my living room.

Soon I also got a Learning Link account; I was on and exploring in just a few minutes. In a meeting at PBS, I heard someone say how much Learning Link was like the Internet. I immediately went home and tried the Internet. I was doing e-mail in less than 5 minutes. I started gophering after the e-mail fun ran out and then tried other types of access. I made

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Getting on the Internet

If you want to gain access to the Internet—the worldwide network of computer networks that includes thousands of databases, discussion groups, and files on every topic imaginable—you'll need to set up an account with an Internet provider. Possibilities range from getting a free account if you're a student at certain colleges and universities to signing up with a commercial online service that will charge you either a flat monthly fee or an actual online usage fee. Here are some places to try first:

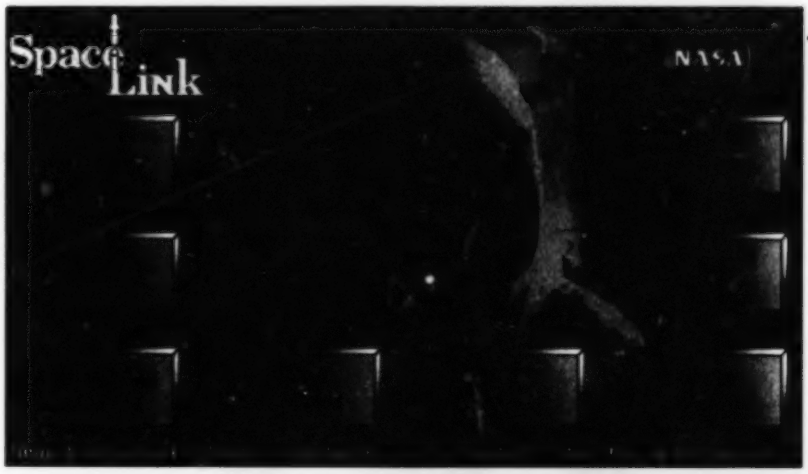
- A local college or university.
- The public library.
- The state board of education or school district (if you're a teacher) or other place of employment.

If you're not able to obtain an Internet connection through one of these institutions, you might try:

- Talking to people at your local computer store.
- Browsing through a computer newspaper, often available for free at computer stores.
- Getting a copy of "The Public Dialup Internet Access List" (PDIAL). If someone you know has e-mail, send a message to info@pdial.com, with the body of the message stating "Send PDIAL."

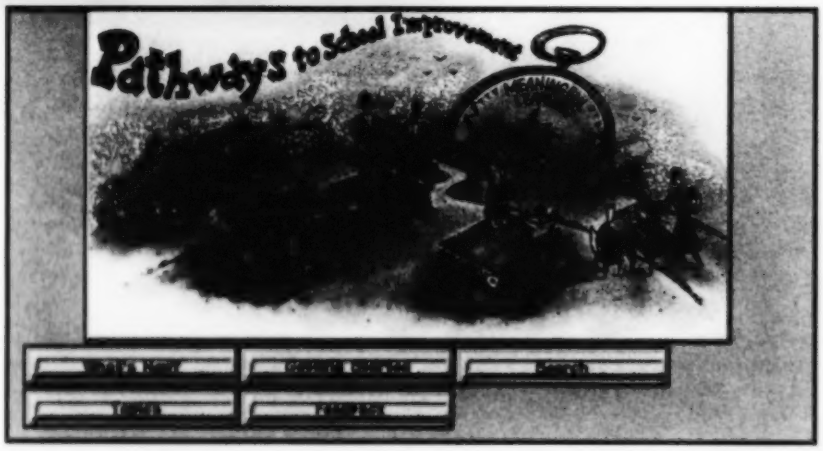
Some of the commercial networks such as America Online, Prodigy, and CompuServe provide full or partial access to the Internet in addition to their own offerings, which include reference services, online publications, online chats, software and games, and travel planning. Many users also find commercial services more attractive, friendlier, and easier to use than direct connections to the Internet. If all you want is access to the Internet, you can probably obtain it more economically using one of the methods above. But if you're also interested in the many other resources available through commercial services, the Internet access you receive from them may be a nice plus.

Classroom Resources on the World Wide Web



NASA Spacelink
http://spacelink.msfc.nasa.gov

North Central Regional Educational Laboratory's Pathways to School Improvement
http://www.ncrel.org/ncrel/sdrs/pathways.htm



some mistakes, but in general people were helpful.

I went back to school and showed the kids. We immediately added the Internet to our classroom technology. Chipper in Nevada became our expert on space science education and Mars. We used NASA's Spacelink so much I was expecting a bill. Fortunately, it is free. It really rounded out our access to knowledge about space. Online, Chipper guided us to studies about Mars. Alex, a 4th-grader in my classroom, wanted to know how he was going to take hamburgers into space. We talked to Chipper about cloning and the transport of embryos into space, and Alex was quickly in touch with a futurist in England who was studying the same problem.

Partners in Learning

I made another large leap when I was given access to the computer labs at George Mason University. Lab staff created a university environment that allowed teachers to be a part of their learning about ways in which educators use technology. We began to use Mosaic, CUSEEME, MUDs (multiuser dungeons for online roleplaying), and other applications. Given school meetings, parent contact, and classroom responsibilities, I think teachers need inclass time or other released time to learn.This year, I'm taking an Internet course. I've also continued to talk online with the parents who were adventurers with me in the learning process. These parents knew the Internet from work, and they helped me. When parents, teachers, and students work together and share, it creates an avenue to help make change.

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The Internet and Acceptable Use Policies: What Schools Need To Know

by Kay Day and Lynne Schrum

Stories abound about students using the electronic superhighway to actively engage in the learning process and teachers using it to communicate with their colleagues. Educators at many schools dream of the day when they will be fully connected to the Internet for professional and curricular activities. However, the prospect of students having open access to unrestricted materials concerns many parents, educators, and community members.

One of the most serious concerns seems to be protecting children from being exposed to or finding inappropriate material. Another concern is protecting the schools from litigation arising from inappropriate use of the Internet. As Fishman and Pea (1994) note, "Since the Internet was not designed with children in mind, many potentially difficult issues must be discussed by both the education and the Internet community" (p. 1). It is the school's responsibility to determine "what safety, liability, and, above all, educational concerns must be addressed before the schools are ready to tap into the Internet" (p. 2).

To address these concerns, schools need to establish policies for the appropriate use of computer networks. An *acceptable use policy*, or AUP, is "a written agreement signed by students, their parents and their teachers outlining the terms and conditions of Internet use—rules of online behavior and access privileges" (Keeping Students, 1995, p. 12). This article examines current trends in developing and implementing AUPs and provides recommendations for schools interested in developing their own policies.

Components of Effective AUPs

Some schools create AUPs before problems surface; others do so only after concerns arise about the appropriate use of the Internet by students. By reviewing literature and interviewing educators who have developed AUPs, we have identified a number of issues that AUPs should address:

■ **Definition of the Internet**. Educators should not assume parents know what the Internet is (Keeping Students, 1995). The education community must bear the burden of informing parents about the Internet and all of its capabilities, both good and bad.

■ **Netiquette**. Just as every school provides a code of conduct governing the behavior of its students, schools with access to the Internet must establish rules to guide students in interacting with others via the computer. A computer network etiquette, or "netiquette," has evolved among users. Rinaldi's *The Net: User Guidelines and Netiquette* (1994) is often cited as a standard in the area of online behavior.

■ **Ethical and Legal Issues.** Both principles of right and wrong and legal issues arise in relation to networks, particularly intellectual freedom and copyright. Schools have been guiding their students on the issue of copyright for print materials for many years. There is a continuing debate, however, concerning copyright protection in the realm of electronic transmissions. Because the Internet is a fluid environment, "it is impossible to predict with certainty what information students might locate" (Minnesota Coalition, 1994, p. 1). The recommendation most frequently made is that schools continue to follow fair use and software reproduction guidelines until there is a "change in the U.S. copyright law aimed at providing greater protection for copyrighted information that can be

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accessed electronically" (Henderson, 1995, p. 56).

As this area of technology has developed, many legal issues have evolved that have not yet been tested in the courts. Groenewold (1994) indicates that some of the troublesome areas will be property rights; mischief and criminal activity such as viruses, worms, and hacking; censorship; security; and commercialization. Stager (1993) notes that "educational institutions are struggling to word their network use policies so as to accommodate First Amendment rights while upholding their responsibilities to maintain a non-intimidating environment" (p. 42).

In this context, it is important to inform students that electronic mail cannot necessarily be considered private communication. Ultimately, the school has the technical ability to back up electronic mail and the ethical responsibility to maintain order and to respond to complaints from other users. School staff would be wise to confer with their legal advisors and to examine state codes when writing an AUP to ensure compliance with current laws.

■ **Objectionable Material.** Just as certain print materials offend some people, so too may some of the materials available on the Internet. As Proctor (1994) notes, "Like other forms of publishing, materials that appear on the network may be judged as pornographic by some users" (p. 26). According to one handbook, it is for this reason that schools develop clear policies regarding Internet use. When developing these policies, schools need to "exercise reasonable oversight while realizing that it is almost impossible to absolutely guarantee that students will not be exposed to objectionable materials" (Protheroe and Wilson, 1994, p. 26). Many schools have already developed a procedure for dealing with objectionable materials within their media selection policies, and this procedure could be extended to cover the use of the Internet.

■ **Privilege Instead of a Right.** Another essential component of an AUP is the inclusion of a clear statement that access to the Internet is a privilege and not a right, and a warning that if a student violates any rule, certain consequences will follow. Connolly and Webster (1993) report that the policy statements of many districts and institutions "treat computing as a privilege so as to more easily enforce rules surrounding its use or abuse by the threat of revoking the privilege." (p. 30).

■ **Penalties and Repercussions.** Students and parents need to be aware of any penalties or repercussions—such as warning letters, loss of Internet access, financial restitution, or legal action—that will be incurred for failing to abide by the AUP. States have varying laws, but typically those convicted of certain computer-related crimes face fines and/or imprisonment.

The AUP must be explicit in addressing these issues to preserve students' right to due process and to protect the school from litigation.

Once a student and parent have read the AUP, they should be required to sign a form stating that they have read and understood the items included. The school should retain these forms as a binding document (Keeping Students, 1995).

Recommendations for Developing an AUP

It is clear that the implementation of AUPs is at an early stage. The AUPs we reviewed generally addressed the issues previously mentioned and also reflected the schools' unique codes of conduct and community values. AUP developers recommended that school personnel implementing AUPs use policies from other schools as guides

The Ten Commandments of Computer Ethics

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people's computer work.
3. Thou shalt not snoop around in other people's files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness.
6. Thou shalt not use or copy software for which you have not paid.
7. Thou shalt not use other people's computer resources without authorization.
8. Thou shalt not appropriate other people's intellectual output.
9. Thou shalt think about the social consequences of the program you write.
10. Thou shalt use a computer in ways that show consideration and respect.

Source: Computer Ethics Institute, © 1992.

and talk to people in schools where policies are in place to see what has or has not been effective.

AUP developers further advised that the AUP be in place before students are allowed Internet access, that it be concerned with students' intellectual freedom, and that the developer engage the school board and staff in a discussion about its implications. They also suggested that the policy use simple terminology, allow for flexibility in responding to varying degrees of misuse, maintain a positive tone, and take into account a community's values. The AUP developers also advised schools to provide guidance or tutorials to students in the proper use of the Internet.

On the basis of our literature review and survey of AUP developers, we would suggest keeping the following procedural steps in mind when writing an AUP:

- The school should appoint an individual to gather information and write a draft AUP, searching the Internet for relevant materials and examining other schools' AUPs.
- The school should form a committee to review and revise the draft. The committee should have representatives from the district office and the schools, and it should include teachers, media specialists, and computer technologists.
- The policy should be reviewed by people outside of the committee, including the school board attorney. The school board may want to adopt the AUP formally as one of its policies.

Schools today are challenged to meet the demands of a changing society, which includes giving students and staff access to information technologies. A carefully crafted AUP can prepare schools to address the issues involved with introducing students to these technologies.

"Schools today are challenged to meet the demands of a changing society. A carefully crafted acceptable use policy can prepare schools to address the issues involved with introducing students to these technologies."

Readers are encouraged to browse the material at Gopher: **riceinfo.rice.edu**. Information is available by subject area, education level, and acceptable and unacceptable uses of net resources (K–12). You may follow the same path on the World Wide Web at URL: **http://riceinfo.rice.edu**.

References

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Fishman, B., and R. Pea. 1994. *The Internetworked School: A Policy for the Future* [Online]. Available: Gopher: riceinfo.rice.edu; information by subject area, education level, and acceptable and unacceptable uses of net resources (K–12).

Groenewold, G. 1994. "The Net Meets the Law" [CD-ROM]. *Univ Review* 12 (4): 79. Article from: Computer Select, Record #16 300 577.

Henderson, C. 1995. "At Stake: Electronic Fair Use of Copyrighted Materials." *Educom Review* 30 (1): 56–57.

"Keeping Students In Line, Online." December/January 1995. *Classroom Connect*, pp. 12–13.

Minnesota Coalition Against Censorship. 1994. *Minnesota Public School Internet Policy* [Online]. Available: Gopher: riceinfo.rice.edu; information by subject area, education level, and acceptable and unacceptable uses of net resources (K–12).

Proctor, L., and A. Allen. 1994. *K–12 Education and the Internet*. East Lansing, MI: National Center for Research on Teacher Learning. ED 373 798.

Protheroe, N., and E. Wilson. 1994. *The Internet Handbook for School Users*. Arlington, VA: Educational Research Service.

Rinaldi, A. 1994. *The Net: User Guidelines and Netiquette* [Online]. Available: FTP: ftp.virginia.edu Directory: /pub/IRD/netiquette.txt

Stager, S. 1993. "Individual Rights Versus Institutional Responsibilities." *Educom Review* 28 (3): 41–44.

Technological Literacy: Comprehension of technological innovation and the impact of technology on society—may include the ability to select and use specific innovations appropriate to one's interests and needs.

—From *The Thesaurus of ERIC Descriptors*, 13th Edition
The Oryx Press, 1995

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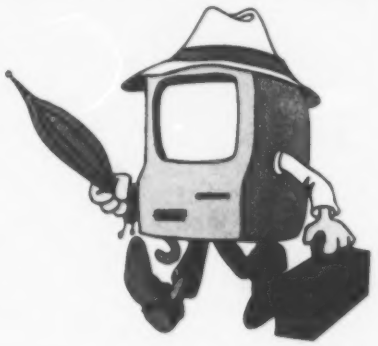
Network Terms To Get You Through the 1990s



Like any field, computer networking has its own terminology. Listed below are brief definitions of commonly used terms.

About the Hardware and Software

Bandwidth—a measure of how much information a communication channel can carry. (If you imagine information flowing through a tube, the diameter of the tube would be the bandwidth.) It requires greater bandwidth to transfer sound and graphic images through a network than to transfer data.

Bps—bits per second; a measure of data transmission speed. **Modems** typically transmit data at 2400 bps, 9600 bps, or 14.4 kilobits per second.

Client—a program that enables users to access an information service. A client communicates across a network with the appropriate **server** and displays results.

Communications software—a program you install on your computer to enable it to exchange information with another computer via a **modem**.

File server—a specially equipped computer that contains files and data that can be used by everyone connected to the **network**.

Gateway—a computer on a **network** that is used to send a message from the network to a distant computer.

Modem—the equipment used to link a computer to a telephone line. A modem may be internal to the computer or a separate piece of hardware.

Network—a group of interconnected computers that can communicate with each other. Computers on a local area network (LAN) are on the same floor or in the same building, are directly connected to a **file server**, and share equipment such as printers. Wide area networks (WANs) link computers or LANs over a greater distance. Computers may be wired directly or have remote, dial-up access to a network **node**.

Node—a powerful computer to which other computers are linked in order to gain access to the **Internet**. Personal computers typically dial in to a node via a **modem**. Internet nodes may be located at colleges and universities, research institutes, libraries, state departments of education, and private companies.

Server—a program on the information side of the network that retrieves items and transmits the results to **clients**.

About Electronic Networks and Services

Bulletin Board System (BBS)—electronic versions of hallway message centers, bulletin board systems allow users to express concerns, ask and answer questions, and receive information from others, usually about a topic of common interest. Individuals with a **modem** and **communications software** generally can dial up a BBS directly, sometimes using a toll-free number; Internet connections are not typically necessary.

Cyberspace—a term used to explain the theoretical boundaries of the Internet and other online services; coined by William Gibson in his 1984 science fiction novel, *Neuromancer*.

Free-nets—grassroots efforts to provide networking services to communities through libraries or free or low-cost dial-up connections. (Free-nets may also be accessed via the Internet.)

Hypertext—a way of organizing and linking information that allows users to access related text, images, or sounds from a single computer screen. For example, a user reading an encyclopedia entry on jazz on any hypertext-capable system could also hear excerpts from recordings, look up biographical facts about musicians, and see photos of them. Hypertext is the basis of the World Wide Web.

Information Superhighway—often used as a synonym for the **Internet**, this theoretical concept is actually much broader, encompassing cable, video, and other communication

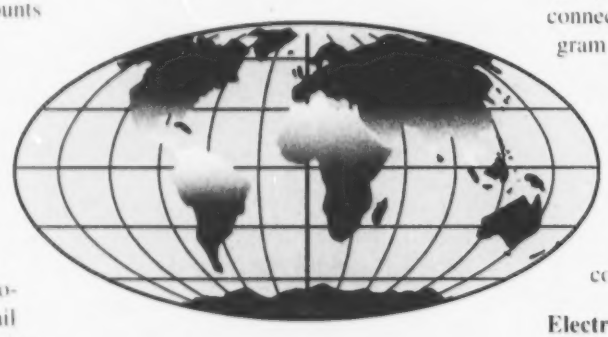
channels expected to be linked together in the future and easily accessible from homes, schools, and workplaces.

Internet—a worldwide collection of computer networks that serves as a conduit for the transfer of messages and files. It is operated most commonly from education and research institutions; individuals have accounts on **nodes**.

Listserv—a network-based discussion group devoted to a particular topic, such as educational administration, special education, or community colleges. To sign on to a listserv, you send your **e-mail address** to the listserv moderator or to an automated program that distributes mail messages. Once you are subscribed to the list, you will receive all e-mail messages that are posted, and you may post messages that will be read by other subscribers. (Be careful not to join too many listservs: some can generate more than 100 e-mail messages a day!) If you'd like to start your own listserv, check with your network provider for technical details.

National Information Infrastructure (NII)— a broad proposal for the federal government to establish standards and governing bodies for the transmission of digital data. Most provisions of the NII are still being debated. Secretary of Education Richard W. Riley refers to the NII as a "seamless web" of communication networks, computers, databases, telephones, televisions, radios, and satellites.

USENET—a system of thousands of special interest groups, called newsgroups, to which readers can send or "post" messages; these messages are then distributed to other computers on the network. USENET is accessible via the Internet, some locally run bulletin boards, and some commercial services. Your network provider can tell you whether you have access to USENET newsgroups and, if so, how to join. Most systems will allow you to search the names of **newsgroups** by keyword: search for "education" if you're interested in general education issues, or "k12" if your primary interest is grades K through 12. (Note: Some newsgroups are not moderated—no one filters the messages or is responsible for reminding members of **"netiquette"**—and discussions can become chaotic. Moreover, student access should be monitored because many topics are not suitable for minors.)



World Wide Web (also called the Web)—a **hypertext** system for finding and accessing Internet resources organized by colorful, graphics-oriented "home pages." The Web links objects seamlessly so users can go directly to particular items located anywhere in **cyberspace**. To access the Web, users need a modem, an Internet connection, and a special client program (see **Web browser**).

About Making a Connection

Download—to transfer information from a computer network to a personal computer.

Electronic conferencing—adding comments about a topic to an ongoing discussion. The discussion could take place over a **listserv**, on a **bulletin board**, or in a **USENET newsgroup**.

E-mail—electronic mail in which messages are sent through a network. To send e-mail, you need an e-mail address—a combination of letters, numbers, and symbols you select when you get an account on the **Internet** or subscribe to a commercial online service.

Emoticons (also called "smilies")—symbols, often composed of punctuation marks, that are added to **e-mail** to help convey emotion or personalize a message. Examples include a smiling face :-) or a frowning face with glasses 8-(. Tip your head to the left to see them.

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A Sampling of Interesting Web Sites for Teachers and Students

Web66: A K–12 World Wide Web Project
(University of Minnesota, College of Education)
http://web66.coled.umn.edu

HotList of K–12 Internet School Sites
(Gleason Sackman, North Dakota State University)
http://toons.cc.ndsu.nodak.edu/~sackmann/k12.html

Center for Networked Information Discovery & Retrieval Education WWW Servers
http://k12.cnidr.org

North Central Regional Educational Laboratory's Pathways to School Improvement
http://www.ncrel.org/ncrel/sdrs/pathways.htm

FTP—File Transfer Protocol; a set of procedures that allow a computer to locate files on another computer on the **Internet** and copy them for local use.

Hypertext Transfer Protocol (HTTP)— a standard used by **World Wide Web** servers to provide rules for moving text, images, and sound across the Internet.

Snail-mail (s-mail)—messages sent via the postal system rather than **e-mail**.

Surfing the 'Net—the act of looking for information on the **Internet**.

Telnet—an **Internet** protocol for connecting to a remote computer. With Telnet, your computer can function as if it is linked directly to the other computer.

Upload—to transfer information from a personal computer to a computer network.

URL—Uniform Resource Locator; an address system for naming **World Wide Web** locations and materials.

What Is . . .

The following items are search engines—different ways to find information in cyberspace.

Archie—a search engine used for locating **FTP** files on the **Internet**. Although this search engine has its uses, it has largely been replaced by more user-friendly engines.

Gopher—an information retrieval program developed at the University of Minnesota (home of the Golden Gophers) in the early 1990s, Gopher encompasses **FTP** and **Telnet** and gives users a simple menu interface through which to access Internet resources. Gopher users are presented with a list of files and services they can retrieve without necessarily knowing their physical location.

Veronica—a service developed at the University of Nevada to help users access **Gopher** directories and the files they contain. Veronica maintains an index of titles of Gopher items; users search by keywords and Boolean operators (AND, OR, NOT) to obtain a set of Gopher items on the topic they're interested in. They can access any of the resulting data from the returned menu.

WAIS (Wide-Area Information Server)—a search engine used for looking up information on many different computer systems from a single interface on the **Internet**.

Web browser—a client program that enables users to navigate the graphics-oriented portion of the **Internet** known as the **World Wide Web**. Web browsers such as **Lynx**, **Mosaic**, and **Netscape** allow users to take advantage of **hypertext** links to move from item to item on the Web. Web browsers enable users to access images, text, audio, animation, and specialized scientific data files. (A word of caution: Not everyone on the Internet can access the World Wide Web through Web browsers because their image capabilities require high **bandwidth** and a fairly sophisticated computer.)

– Compiled by Barak Stussman
ACCESS ERIC

An excellent example of a Gopher/Web site for educators is the AskERIC Virtual Library. To get there, gopher to ericir.syr.edu or set your Web browser to http://ericir.syr.edu. If you want to connect to the U.S. Department of Education's Gopher server, the remote address is gopher.ed.gov. If you have a Web browser, open the URL and connect to http://www.ed.gov.

For a list of public Internet access points to the ERIC database and step-by-step login instructions, send an e-mail message to ericdb@aspensys.com.

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Federal Initiatives in Educational Technology

Educational technology is a key element of many education improvement efforts. It enhances teaching and learning and is vitally important for preparing young people for the workplaces of tomorrow. The National Information Infrastructure (NII), set forth by the President, encourages an acceleration of the goal to connect all of the nation's classrooms, libraries, hospitals, and law enforcement agencies to the information superhighway.

The U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA), which advises the President on domestic and international telecommunications policies, maintains a toll-free phone number citizens may call for information about the information superhighway. Call 1–800–NII–8818, gopher to **gopher.ntia.doc.gov**, or open the URL and connect to **http://www.ntia.doc.gov**.

The federal government has undertaken several initiatives to help K–12 schools develop, apply, and use technology to enhance student learning and achievement and educational practice. A list of selected federally sponsored online sites and grant programs follows. Here and elsewhere in this journal, if an Internet address appears to have changed, please contact the host organization directly.

Online Sites

INet. The U.S. Department of Education maintains a Gopher/FTP/World Wide Web site that includes general information about the Department and its programs, as well as directories of effective programs and education-related organizations; research findings and syntheses; publications for teachers, parents, and researchers; and funding opportunities. INet also offers links to ERIC and other Department of Education-sponsored Gophers and World Wide Web sites, including those maintained by the Regional Educational Laboratories and the National Research Centers. Among the many full-text resources available on the INet Online Library are:

- Information on elementary and secondary programs, school-to-work-transition, family involvement, and education technology;
- Education research findings and statistics;
- *A Teacher's Guide to the U.S. Department of Education* and *A Researcher's Guide to the U.S. Department of Education*;
- A searchable database of Blue Ribbon Schools; and
- The National Commission on Time and Learning's *Prisoners of Time*.

Gopher to **gopher.ed.gov** (or select North America —> USA —> General —> U.S. Department of Education from the All/Other Gophers menu on your system). If you have a Web browser, open the URL and connect to **http://www.ed.gov**.

Eisenhower National Clearinghouse for Mathematics and Science Education (ENC). ENC offers educators a searchable database of K–12 math and science instructional resources, as well as a database of federal programs, searchable by state. The full-text of various publications and links to other materials of interest to math and science educators are also provided. To reach ENC via modem, dial 1–800–362–4448 or 1–614–292–9040. If you have Internet access, telnet or gopher to **enc.org**. If you have a Web browser, set the URL to **http://www.enc.org**.

FedWorld®. FedWorld Online Information Service, established by the National Technical Information Service (NTIS), provides the public with a user-friendly central resource for government information, particularly in the scientific, business, and technical areas. Through FedWorld, individuals also may obtain public access to more than 100 federal online systems for up to 3 hours per day at no charge. To access FedWorld with a modem, dial 1–703–321–8020. If you have Internet access, telnet to **fedworld.gov** or FTP to **ftp.fedworld.gov** (log-on "anonymous"). If you have a Web browser, set the URL to **http://www.fedworld.gov**.

Library of Congress. Educators may tap into the vast holdings of the Library of Congress via Gopher

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(marvel.loc.gov, Port 70) or Web browser **(http://www.loc.gov)**. To access extensive legislative information such as pending bills and House and Senate data, set your URL to **http://thomas.loc.gov.**

NASA Spacelink. The National Aeronautics and Space Administration (NASA) Spacelink is an electronic information system containing current NASA educational services, classroom materials, instructional activities, and space program spinoffs, as well as NASA news, information and reference data on aeronautics and space exploration, and NASA Field Center activities. For a direct connection, have your modem dial 205–895–0028. If you have Internet capabilities, gopher to **spacelink.msfc.nasa.gov**, or point your WWW browser to **http://spacelink.msfc.nasa.gov**.

Technology Resources Center. The Technology Resources Center at the National Library of Education is a demonstration site for the application of technology at all levels of education. The center offers personalized demonstrations to educators and visitors of such cutting-edge technology as satellite downlinks, interactive videodiscs, CD-ROM, and the latest computer hardware and software. Appointments are encouraged, but educators and the general public are welcome to walk in to the Center's office at Capitol Place, 80 F Street NW, Washington DC. Call 202–219–1699 or write to 555 New Jersey Avenue NW, Washington, DC 20208–5725.

Grant Programs

Note: Grant information was current at the time of writing. Some programs may be changed in the coming months.

U.S. Department of Education

Technology funding has been made available to the states through the Goals 2000: Educate America Act. Grants for additional state and local programs for school technology include the following:

Challenge Grants for Technology in Education. The Interagency Technology Task Force in the Department of Education recently closed a competition for grants to support communities of educators, parents, industry partners, and others who are working to transform their factory-era schools into Information-Age learning centers. Each application included a local education agency acting within a strong consortium of partners to address community needs, including state education agencies, colleges and universities, telecommunications firms, entertainment producers, software developers and hardware manufacturers, libraries and museums, community centers, and local businesses.

Funds awarded through the grants will supplement the partners' investments by supporting new curriculum, professional development, and evaluations of educational effectiveness. Approximately 12 grants will average $1 million per year; four or five grants may range between $2 and $3 million per year. Challenge grants are expected to be funded annually for 5 years. For more information, contact the Interagency Technology Task Force, U.S. Department of Education, 600 Independence Avenue SW, Washington, DC 20202–5544; 202–708–6001.

Regional Technology Consortia Program. In late 1995, the Department of Education will award approximately $10 million to consortia in six geographic regions to help state and local education agencies, teachers, administrators, and others integrate advanced technology into K–12 classrooms and media centers. The program will also support professional development and resource dissemination within each region. The Regional Technology Consortia will be composed of state education agencies, institutions of higher education, and nonprofits, which will work closely with established education networks such as the National Diffusion Network. For more information, contact the Office of Educational Technology, U.S. Department of Education, Office of Educational Research and Improvement, 555 New Jersey Avenue NW, Washington, DC 20208; 202–401–1444.

Star Schools Program. This multimillion dollar distance education program is designed to improve instruction in various subjects through technology use, particularly in schools serving low-income (Chapter 1) students and other traditionally underserved populations. Demonstration grants are provided to develop audiovisual facilities and equipment, to create instructional programming, and to provide technical assistance for improving instruction through technology. More than 50,000 teachers, administrators, parents, and policy makers have participated in staff development and community development activities produced via satellite, compressed video technology, fiber optics, videodisc, and microcomputer-based networks. For further information, contact Star Schools, U.S. Department of Education, Office of Educational Research and Improvement, 555 New Jersey Avenue NW, Washington, DC 20208; 202–219–2116.

Teacher Networking Project. Fifteen grants totaling $1.8 million were recently awarded to projects in 10 states—California, Colorado, Florida, Louisiana, Michigan, Missouri, Mississippi, New York, Oregon, and Texas—to support teacher networking through mentoring, online training, and curriculum development. For more information, contact the Office of Elementary and Secondary Education, U.S. Department of Education, 600 Independence Avenue SW, Portals Building, Room 4000, Washington, DC 20202–6100; 202–219–2143.

The Technology, Educational Media, and Materials Program (TMM). TMM, administered by the Department of Education's Office of Special Education Programs, Division of Innovation and Development, seeks to improve the educational outcomes of children with disabilities by providing discretionary grants to support research on how technology can be used to assess and instruct these children. The

TMM Program also supports efforts to develop new TMM tools, train practitioners, and develop projects that advance the availability, quality, use, and effectiveness of technology. TMM also supports educational media and materials in the education of children and youth with disabilities. For further information, contact the TMM Program, Office of Special Education Programs, 330 C Street SW, Room 3523, Washington, DC 20202; 202–205–8123.

National Science Foundation (NSF)

The Applications of Advanced Technology Program. This program provides grants to examine the strengths and weaknesses of innovative applications of advanced technologies and to lay the foundation for using revolutionary computer and telecommunications systems and related technologies for teaching and learning science and mathematics.

The Networking Infrastructure for Education Program (NIEP). NIEP funds alliances of academic institutions, school districts, professional societies, state agencies, and others concerned with education reform to undertake policy studies, research, and demonstration projects related to the role of electronic networks in support of reformed education.

The Teacher Enhancement Program (TE). TE seeks to improve, broaden, and deepen the interdisciplinary and pedagogical knowledge of teachers, administrators, and others who play significant roles in providing high-quality mathematics, science, and technology education for students from pre-kindergarten through 12th grade.

For information on any of the above programs, contact NSF, 4201 Wilson Boulevard, Arlington, VA 22230; 703–306–1651.

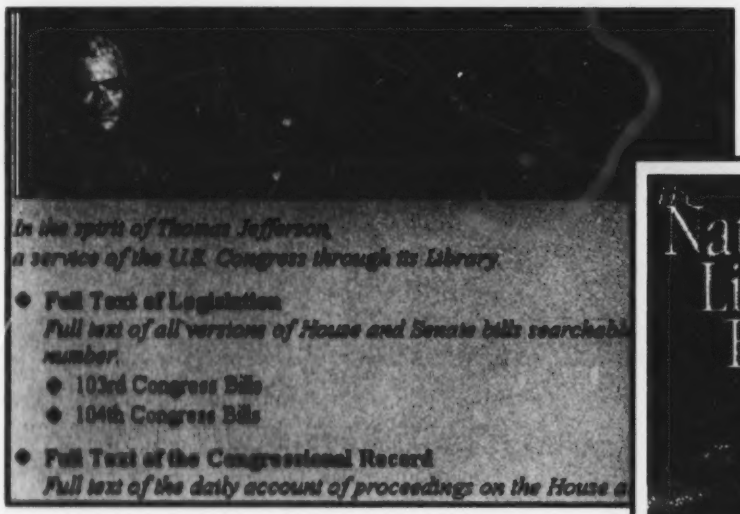
U.S. Department of Commerce

The Public Telecommunications Facilities Program (PTFP). PTFP provides financial assistance for noncommercial telecommunications equipment. Call 202–482–5802 or write to the Senior Program Director, National Telecommunications and Information Administration, U.S Department of Commerce, Washington, DC 20230.

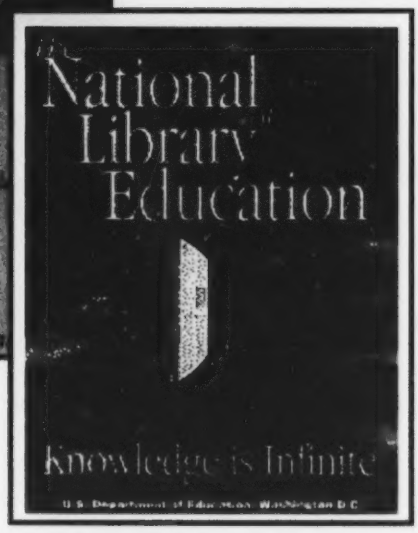
The Telecommunications and Information Infrastructure Application Program (TIIAP). TIIAP awards grants to state and local governments and nonprofit organizations for the planning and construction of telecommunications networks that will offer innovative educational, cultural, and social services. Send e-mail to **tiiap@ntia.doc.gov** or contact National Telecommunications and Information Administration, U.S Department of Commerce, Room H–4889, Washington, DC 20230; 202–482–2048.

– Compiled by Barbara Reuben-Powell and Carol Boston, ACCESS ERIC

Classroom Resources on the World Wide Web


In the spirit of Thomas Jefferson,
a service of the U.S. Congress through its Library
Full Text of Legislation
Full text of all versions of House and Senate bills searchable
number
103rd Congress Bills
104th Congress Bills
Full Text of the Congressional Record
Full text of the daily account of proceedings on the House a

◀ **Library of Congress "THOMAS"**
http://thomas.loc.gov



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http://www.ed.gov/NLE/index.html

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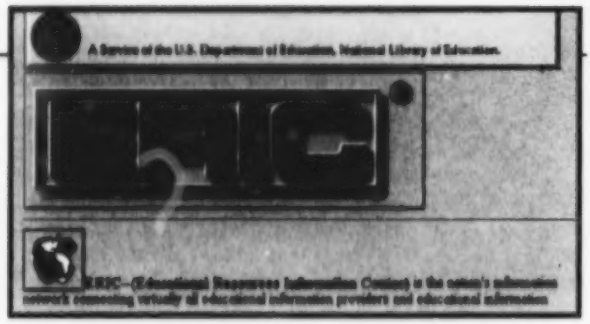

Online With ERIC

One of the great things about cyberspace is that the people who run the various sites create links with other sites, allowing you to go beyond the Gopher site or World Wide Web (WWW) page you start with. We hope you'll visit the following ERIC sites both for their own offerings and for the gateways they provide to other education resources.

AskERIC

The ERIC Clearinghouse on Information & Technology at Syracuse University manages AskERIC, an Internet-based service that provides a full range of education information to teacher educators, teachers, students, librarians, counselors, administrators, parents, and others. AskERIC offers:

- A question-answering service,
- The AskERIC Virtual Library, and
- Internet access to the ERIC database.

If you have an education-related question, send it via e-mail to **askeric@ericir.syr.edu**. You'll receive an e-mail response in approximately 48 hours. Depending on the nature of your question, you might receive the full text of one or more research summaries called ERIC Digests, the results of a short ERIC database search, or the addresses of relevant Internet Gopher sites and listservs.

Through the AskERIC Virtual Library, you can find InfoGuides and database searches on key education topics; the full text of lesson plans, research summaries, and other resources; and gateways to other education-related Internet sites. To use the AskERIC Virtual Library, gopher or telnet to **ericir.syr.edu**. If you have Lynx, Mosaic, or another WWW browser, open the URL and connect to **http://ericir.syr.edu**.

AskERIC also provides public access to the ERIC database with search capability. The URL is **http://ericir.syr.edu/ERIC/eric.html**. You can also telnet to **ericir.syr.edu**. Log in as "Gopher," hit Return/Enter for the password, then follow the instructions.

National Parent Information Network

The ERIC Clearinghouse on Elementary and Early Childhood Education (ERIC/EECE) at the University of Illinois at Urbana–Champaign has created a WWW server on the Internet specifically devoted to child development, care, and education, and the parenting of children from birth through early adolescence. This National Parent Information Network (NPIN), cosponsored by the ERIC Clearinghouse on Urban Education at Columbia University, includes:

- Short articles from groups such as the National Urban League, the National PTA, and the Center for Early Adolescence;
- Discussion groups and forums on early childhood topics; and
- Parents AskERIC, a question-answering service for parents that taps the resources of the federally funded ERIC system.

To access NPIN, gopher to **ericps.ed.uiuc.edu**. If you have WWW access, open the URL and connect to **http://ericps.ed.uiuc.edu/npin/npinhome.html**. If you have e-mail capabilities, you can send your questions about early childhood and elementary topics to Parents AskERIC at **askeece@uiuc.edu**.

Other ERIC Gopher/WWW Sites

All ERIC components have e-mail addresses (listed on the inside back cover) for routine correspondence. The following components also offer online services.

ACCESS ERIC (for general information about the ERIC system and links to all other ERIC sites)
Gopher: aspensys.aspensys.com, Education and Training Division
URL: http://www.aspensys.com/eric2/welcome.html

Adjunct ERIC Clearinghouse for Art Education
URL: http://www.indiana.edu/~ssdc/art.html

Adjunct ERIC Clearinghouse for Child Care
URL: http://ericps.ed.uiuc.edu/nccic/nccichome.html

Adjunct ERIC Clearinghouse on Consumer Education
URL: http://www.emich.edu/public/coe/nice/nice.html

Adjunct ERIC Clearinghouse for Law-Related Education
URL: http://www.indiana.edu/~ssdc/lre.html

Adjunct ERIC Clearinghouse for United States-Japan Studies
URL: http://www.indiana.edu/~japan

ERIC Clearinghouse on Assessment and Evaluation
Gopher: gopher.cua.edu, Special Resources
URL: http://www.cua.edu/www/eric_ae

ERIC Clearinghouse on Counseling and Student Services
URL: http://www.uncg.edu/~ericcas2

ERIC Clearinghouse on Educational Management
URL: http://darkwing.uoregon.edu/~ericcem/home.html

ERIC Clearinghouse on Elementary and Early Childhood Education
Parents AskERIC (Internet-based question-answering service): askeece@uiuc.edu
National Parent Information Network (NPIN) Gopher: ericps.ed.uiuc.edu
NPIN URL: http://ericps.ed.uiuc.edu/npin/npinhome.html

ERIC Clearinghouse on Information & Technology
AskERIC (Internet-based question-answering service): askeric@ericir.syr.edu
AskERIC Virtual Library Gopher: ericir.syr.edu
AskERIC Virtual Library URL: http://ericir.syr.edu

ERIC Clearinghouse on Languages and Linguistics
URL: http://ericir.syr.edu/ericcll

ERIC Clearinghouse on Reading, English, and Communication
Gopher: gopher.indiana.edu
URL: http://www.indiana.edu/~eric_rec

ERIC Clearinghouse on Rural Education and Small Schools
Bulletin Board: 1-800-377-7641 (at "first name" prompt, type ERIC; at "last name," CRESS; at "password," GUESS.
URL: http://www.ael.org/~eric/eric.html

ERIC Clearinghouse for Science, Mathematics, and Environmental Education
Gopher: gopher.ericse.ohio-state.edu
URL: http://www.ericse.ohio-state.edu

ERIC Clearinghouse for Social Studies/Social Science Education
URL: http://www.indiana.edu/~ssdc/eric-chess.html

ERIC Clearinghouse on Urban Education
URL: http://eric-web.tc.columbia.edu

Oryx Press (publisher of *Current Index to Journals in Education*)
Gopher: gopher.oryxpress.com
URL: http://www.oryxpress.com

Sample ERIC World Wide Web Home Pages

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Selected Resource Organizations

Given the tremendous growth in K–12 computer networking, we offer a selective rather than a comprehensive list of organizations you may contact for more information. If you're not sure if your state has an education network, contact your state department of education. If an e-mail, Gopher, or World Wide Web address provided below appears to have changed, please contact the host organization directly.

Academy One
National Public Telecomputing Network (NPTN)
8802 San Antonio
Buena Park, CA 90620
Phone: 714–821–4472
E-mail: a-1@nptn.org
URL: http://yn.la.ca.us

NPTN is a nonprofit organization dedicated to developing free public access to computerized information and communication services for the general public. NPTN's educational programs, called Academy One, currently include a daily electronic newsletter for administrators, curriculum databases for teachers, and e-mail clubs for students. Special events have included a simulated space launch, TeleOlympics, a bridge-building contest, and a sonnet-writing competition. To receive Academy One program updates by e-mail, send a request to **a-1@nptn.org**.

American Federation of Teachers (AFT)
555 New Jersey Avenue
Washington, DC 20001
Phone: 202–879–4400

AFT offers a bulletin board and conference area on America Online in the Teachers' Information Network within the Education section. Some materials are available to the public; others are restricted to members.

Association for Educational Communications and Technology (AECT)
1025 Vermont Avenue NW, Suite 820
Washington, DC 20005
Phone: 202–347–7834
Fax: 202–347–7839
Gopher: gopher.sunbird.usd.edu 72
URL: http://www.aect.org/

AECT serves educational media and instructional technology professionals working toward systemic improvement of instruction and learning through effective use of technology. It publishes *Tech Trends*, a magazine about integrating technology and education, and *Educational Technology Research and Development*, a scholarly research journal.

Association for Supervision and Curriculum Development (ASCD)
Education and Technology Resources Center
1250 North Pitt Street
Alexandria, VA 22314–1453
Phone: 703–549–9110
E-mail: etrc@ascd.org
Gopher: gopher.ascd.org
URL: http://www.ascd.org/

This center offers ASCD members and others technical assistance and publications, including the *Curriculum/ Technology Quarterly* newsletter.

Computer Learning Foundation
Box 60007
Palo Alto, CA 94306
Phone: 415–327–3347

This nonprofit educational foundation is dedicated to advancing computer literacy. Write to request a free copy of *Computer Learning*, a booklet that describes the group's projects and publications supporting technology in education. Offerings include lesson plan books that aid in curriculum integration.

Consortium for School Networking (CoSN)
P.O. Box 65193
1555 Connecticut Avenue NW
Suite 200
Washington, DC 20036
Phone: 202–466–6296
Fax: 202–462–9043
E-mail: info@cosn.org
Gopher: gopher.cosn.org
URL: http://cosn.org

CoSN is a membership organization of institutions formed to further the development and use of computer network technology in K–12 education. To join CoSN, request an application from the above address. To contribute your ideas, lesson plans, and projects for others to access over the Internet, send as e-mail to **info@cosn.org**.

Education Development Center Center for Children and Technology (CCT)
96 Morton Street, 7th Floor
New York, NY 10014
Phone: 212–807–4200
E-mail: cct@edc.org

This research center investigates the key roles that technology can play in

supporting and sustaining qualitative change in the nation's schools. It carries out research and development projects on how technology can provide decentralized and multiple access to a variety of media; supports teachers and students in creating a broad range of materials and products; and helps to bring about significant changes in teaching and learning. Write or send e-mail for a free subscription to the quarterly newsletter and a listing of low-cost publications.

Electronic Frontier Foundation (EFF)
1667 K Street NW, Suite 801
Washington, DC 20006–1605
Phone: 202–861–7700
E-mail: ask@eff.org
Gopher: gopher.eff.org
URL: http://www.eff.org

This membership organization focuses on policy issues related to national networking. In the K–12 context, EFF concerns itself with policies for determining what resources students will have access to. EFF publishes a free newsletter, *EFFector Online*, on general Internet topics.

ERIC Clearinghouse on Information & Technology (ERIC/IT)
Syracuse University
4–194 Center for Science and Technology
Syracuse, NY 13244–4100
Phone: 1–800–464–9107
E-mail: eric@ericir.syr.edu
AskERIC (Internet-based question-answering service): askeric@ericir.syr.edu
Gopher: ericir.syr.edu
URL: http://ericir.syr.edu

ERIC/IT is one of 16 clearinghouses in the ERIC system, which is sponsored by the U.S. Department of Education, Office of Educational Research and Improvement, within the National Library of Education. ERIC/IT specializes in educational technology and library/information science and processes documents in these areas for the ERIC database. The clearinghouse also provides user services and publications related to its scope areas, including help sheets for using the Internet.

ERIC/IT piloted and operates AskERIC, the popular Internet-based question-answering service for teachers, administrators, librarians, parents, and others. It also maintains the AskERIC Virtual Library of full-text lesson plans and other practitioner-oriented materials; provides public access to the ERIC database; and administers several listservs, including LM_NET for library media specialists.

The Global SchoolNet (FrEdMail)
P.O. Box 243
Bonita, CA 91908
Phone: 619–475–4852
E-mail: info@gsn.org
URL: http://www.gsn.org

The FrEdMail (Free Educational Mail) Network, founded in 1984, is now being called The Global SchoolNet because it links students and educators around the world. Teachers share experiences, curriculum ideas, and teaching materials, as well as information about workshops.

I*EARN
345 Kear Street
Yorktown Heights, NY 10598
Phone: 914–962–5864
Fax: 914–962–6472
E-mail: iearn@iearn.org
URL: http://www.igc.apc.org/iearn/

The International Education and Resource Network (I*EARN) links more than 1,000 primary and secondary schools and youth-service organizations in 20 countries. Through I*EARN's online conferences, students and teachers work collaboratively on ecological and humanitarian relief projects such as rainforest preservation and support for children in Bosnia and Somalia.

(continued on page 22)

Funding Resources

Many educators are interested in locating information about grants to help fund technology projects. Here are a few resources to get you started:

- **The Foundation Center**. This independent nonprofit organization was established by foundations in 1956 to provide an authoritative source of information on foundation and corporate giving. The Center maintains a comprehensive database of grant programs and publishes *The Foundation Directory*, the classic reference work for grantseekers. Information is provided at no charge at five Foundation Center libraries (New York, San Francisco, Cleveland, Atlanta, and Washington, DC) and 200 cooperating libraries across the country. To locate the collection nearest you, call 1–800–424–9836 or visit the Foundation Center's Web site at **http://fdncenter.org/**.

- **The Grantwriter's Newsletter of Funding Resources.** This monthly newsletter, written and published by an educator, offers timely information on grants and contests. $36 for 12 issues. *Grantwriter's Newsletter of Funding Resources*, 617 Wright Avenue, Terrytown, LA 70056.

- **GrantsWeb**. This Internet site (**http://infoserv.rttonet.psu.edu/gweb.htm**) is a starting point for accessing grants-related information and resources online, including funding opportunities, grants databases, and policy developments. GrantsWeb is in an early stage of development; your contributions of information for posting and your assistance in identifying other relevant resources are encouraged.

Selected Resource Organizations

International Society for Technology in Education (ISTE)
1787 Agate Street
Eugene, OR 97403–1923
Phone: 1–800–336–5191 or
503–346–4414
AOL and AppleLink: ISTE
CompuServe: 70014,2117
Internet: ISTE@oregon.uoregon.edu
Gopher: gopher.uoregon.edu
URL: http://iste-gopher.uoregon.edu

ISTE is the largest international nonprofit professional organization serving computer-using educators. It is dedicated to improving education through the use and integration of technology. Members receive a subscription to *Learning and Leading with Technology* (formerly, *The Computing Teacher*) and may participate in a special interest group on telecommunications.

International Technology Education Association (ITEA)
1914 Association Drive
Reston, VA 22091–11539
Phone: 703–860–2100
URL: http://www.tmn.com/
Organizations//ris/TTRA.html

This membership organization focuses on ensuring that all children receive the best possible education about technology and supports continuing improvement in technology programs and professional development. ITEA is spearheading a standards project called *Technology for All Americans*, which will develop a rationale and structure for technology education and standards for K–12 curriculum content, evaluation/assessment, and teacher education.

The Internet Society
12020 Sunrise Valley Drive, Suite 210
Reston, VA 22091
Phone: 703–648–9888
Fax: 703–648–9887
E-mail: isoc@isoc.org
URL: http://www.isoc.org/

The Internet Society is an international membership organization for individuals and organizations that promotes the use of the Internet. Its goals are: (1) To facilitate and support the technical evolution of the Internet as a research and education infrastructure and to stimulate the involvement of the scientific community, industry, government, and others in the evolution of the Internet; (2) To educate the scientific community, industry, and the public at large concerning the technology, use, and application of the Internet; (3) To promote educational applications of Internet technology for the benefit of government, colleges and universities, industry, and the public at large; and (4) To provide a forum for exploration of new Internet applications and to stimulate collaboration among organizations in their operational use of the global Internet.

K12Net
c/o Janet Murray
1151 Southwest Vermont Street
Portland, OR 97219
Phone: 503–280–5280, ext. 450
E-mail: jmurray@psg.com
URL: http://arlo.wilsonhs.
pps.K12.or.us

This bulletin board-based system works through "echo" forums built around curriculum areas for teachers and students interested in particular topics. Cooperative projects such as the creation of the *Global Village News* publication are undertaken through forums. Access is through FidoNet, a free, general-interest computer network that joins more than 15,000 computer bulletin boards in more than 50 countries. Call a local computer store or your public library to find out about active bulletin boards in your region.

KIDSPHERE
c/o Robert D. Carlitz
University of Pittsburgh
Pittsburgh, PA 15260

KIDSPHERE is a global Internet-based electronic discussion group for teachers and administrators who want to develop collaborative projects, ranging from pen-pal exchanges to international collaborations involving thousands of teachers. It includes archives of materials from previous projects. A spinoff of the KIDSPHERE listserv is another listserv called KIDS, which allows children to post messages to other children. For more information, send an e-mail request to **kidsphere-request@vms.cis.pitt.edu** or **joinkids@vms.cis.pitt.edu**.

National Center for Technology Planning (NCTP)
c/o Larry S. Anderson
P.O. Box 5425
Mississippi State, MS 39762
Phone: 601–325–2281
Fax: 601–325–7599
E-mail: lsa1@ra.msstate.edu
Gopher: gopher.msstate.edu
URL: http://www2.msstate.edu/~lsa1

NCTP electronically collects and disseminates school district technology plans, planning aids such as checklists and forms, and relevant monographs.

National Education Association (NEA) School Renewal Network
NEA National Center for Innovation
1201 16th Street NW
Washington, DC 20036
Phone: 202–822–7783
Fax: 202–822–7482
E-mail: ljennings@cet.nea.org

Dedicated to school reform, this electronic network was created to develop a research base through a community of actively engaged practitioners and researchers. Participants include partners in the Center's programs, federally funded research and development laboratories and centers, several research universities, and schools involved in other national school reform efforts. NEA also offers resources to members and the general public through America Online.

National Geographic Kids Network
National Geographic Society
Educational Services
Department 5413

Selected Resource Organizations

Washington, DC 20036
Phone: 1–800–368–2728

Kids Network provides a hands-on geography and science curriculum in English and Spanish for grades 4 through 6. Students are assigned to research teams composed of 10 to 15 different classes within and outside of the United States. They conduct original research and learn about scientific processes as they investigate such topics as acid rain, weather, and pollution at the local level, then compare data with other members of the research team. Scientists help them trace geographic patterns in the data through letters, maps, and graphs.

National School Boards Association Institute for the Transfer of Technology to Education (ITTE)
1680 Duke Street
Alexandria, VA 22314
Phone: 703–838–6213

ITTE offers publications, conferences, and seminars for school board members, school board staff, and other educators on the effective use of technology in education. School districts pay membership fees according to their size.

National School Network Testbed
BBN Systems and Technologies
70 Fawcett Street
Cambridge, MA 02138
Phone: 617–873–4247
Fax: 617–873–2455
E-mail: bpeake@bbn.com
URL: http://copernicus.bbn.com/testbed2/TB2home.html

The National School Network Testbed, organized by the Educational Technologies group at BBN and funded by the National Science Foundation, consists of 250 institutions, including 150 U.S. schools that are using networks to support school change. During this phase of the Testbed, researchers are studying the costs and benefits of organizing the information infrastructure locally and involving everyone in the community in its creation. The Testbed Web site directs users to projects of Testbed partners around the country and provides resources and discussions on building the local information infrastructure and network-based curriculum and instruction, professional development, and evaluation.

PBS Learning Link
1320 Braddock Place
Alexandria, VA 22314
Phone: 703–739–8464
URL: http://www.whro-pbs.org/ll/

Sponsored by the Public Broadcasting Service, PBS Learning Link provides access to Curriculum Connection, a searchable database of public television programs, lesson plans, and classroom projects, and lesson plans from the National Teacher Training Institute. It also provides links to other educational Internet connections and school, college, and university Web sites.

PSINet (People Sharing Information Network)
Council of State Science Supervisors
c/o Jack Gerlovich
Drake University
3206 University Avenue
School of Education
Des Moines, IA 50311
Phone: 515–271–3912

PSINet is a national computer conferencing network that links state science and mathematics supervisors with science and mathematics education agencies. Networks are in place in nearly 40 states.

TERC
2067 Massachusetts Avenue
Cambridge, MA 02140
Phone: 617–547–0430
Fax: 617–349–3535
E-mail: communications@terc.edu
Gopher: gopher.hub.terc.edu
URL: http://hub.terc.edu:70/hub/owner/TERC

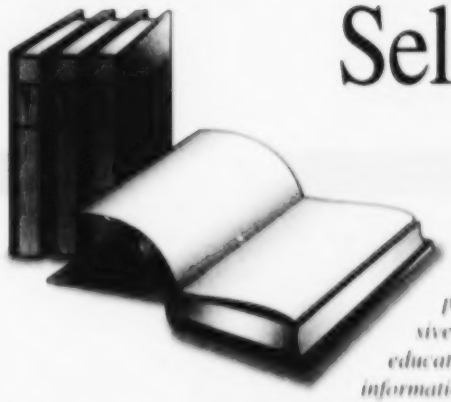
TERC is a nonprofit education research and development organization committed to improving mathematics and science learning and teaching. Its work includes creating innovative curriculum, fostering teacher development, conducting research on teaching and learning, and developing technology tools. For more than a decade, TERC has explored the educational potential of telecommunications. Its Network Science curriculum and projects include LabNet (an electronic community for teachers), Global Lab, and the Testbed for Telecollaboration.

– Compiled by Barak Stussman and Michael Heeg, ACCESS ERIC

If you need help finding the best way to use ERIC, call ACCESS ERIC at

1–800–LET–ERIC

Selected Reading List



Books, magazines, and articles about computer networking are proliferating. The reading list that follows is by no means comprehensive, but rather a selective resource that will give teachers and teacher educators a starting point in their exploration. Because readers differ in their information needs and current levels of knowledge, we recommend that you study the table of contents or the introduction of each publication to determine whether it will be helpful to you. Items for which ERIC document numbers (ED followed by six digits) are provided may be read on microfiche at more than 1,000 locations across the country or purchased as paper copy from the ERIC Document Reproduction Service at 1–800–443–ERIC (3742). As noted, some of the items may be obtained over the Internet for free. These are often among the most current and regularly updated resources available.

Connect Online!
Lynne Schrum and Gwen Solomon, 1995

This telecommunications simulation package introduces middle school students and teachers to the online world without hardware and phone costs. Students practice sending e-mail, exploring forums, uploading and downloading files, conducting online research in various curriculum areas, and exploring America Online, CompuServe, and the Internet. Software is available for LANs or stand-alone Windows and Macintosh platforms. A teacher's resource guide and a workbook are also available. $340.95. For product information, call 1–800–824–5179 or fax your request to 1–800–453–7882. Cincinnati, OH: Thomson Learning Tools.

Crossing the Internet Threshold: An Instructional Handbook
Roy Tennant, John Ober, and Anne G. Lipow, 1993; ED 366 335

This handbook is designed for people who have access to the Internet and want to learn how to use it and for people who want to teach Internet skills to others. It includes the content of a 14-hour training institute and beginning- and advanced-level exercises, as well as discussion topics, sample overheads and other materials, and a checklist of reminders for trainers. $45. Library Solutions Press, 1100 Industrial Road, Suite 9, San Carlos, CA 94070; 415–592–8904.

Demystifying the Internet
ERIC Clearinghouse on Adult, Career, and Vocational Education, 1994; ED 372 195

This issue of the *Practitioner File* offers help to adult, career, and vocational educators who have little or no experience with electronic networking. It explains how the Internet got started and how you can find a connection, and describes listservs and electronic journals of interest to this community. Free. Send an e-mail request to **ericacve@magnus.acs.ohio-state.edu** or write to ERIC/ACVE, 1900 Kenny Road, Columbus, OH 43210–1090.

Education on the Internet: A Hands-on Book of Ideas, Resources, Projects, and Advice
Jill Ellsworth, 1994

Chapters include Internet in Elementary, Middle, and High School Classrooms; Internet Resources by K–12 Curricular Area; How To Find More K–12 Information; Internet and Higher Education; Undergraduate Internet Resources by School [e.g., business, education]; Graduate Schools; Teaching and Learning with Computer-Mediated Communication; Scholarship, Research, Libraries, and Resources; Distance Learning; and Learning on Your Own. $25. Sam's Publishing, 201 West 103rd Street, Indianapolis, IN 46290–1097; 800–545–5914.

An Educator's Guide to Electronic Networking: Creating Virtual Communities
Barbara L. Kurshan, Marcia A. Harrington, and revised by Peter G. Milbury, 1994; ED 372 772

This guide (IR–96) will help planners and designers consider the type of networked community they want to create and how they can create it, drawing on existing networks and projects where possible. It offers a decision-making procedure and frameworks of models to guide network selection or creation. $10 plus $3 shipping. ERIC Clearinghouse on Information & Technology, Syracuse University, 4–194 Center for Science and Technology, Syracuse, NY 13244–4100; 1–800–464–9107.

EFF's Guide to the Internet, v. 2.38
(formerly *The Big Dummy's Guide to the Internet*)
Adam Gaffin, 1995

Written for novices who want to learn about the Internet, this user guide is available free of charge at several locations, including the Electronic Frontier Foundation's (EFF) online archives at **ftp.eff.org**, **gopher.eff.org** and **http://www.eff.org/**; through the EFF BBS (1–202–861–1223); and on America Online—keyword EFF. The *Guide* is also available in print form from MIT Press for $14.95 at many bookstores.

Evaluating Technology-Based Instructional Programs
Kathleen Holmes and Don Rawitsch, 1993

This booklet describes how to create evaluation plans that will help readers make decisions about technology. It covers both formative and summative evaluation of curriculum goals involving technology. $15. Published by the Texas Center for Educational Technology and available through the International Society for Technology in Education, 1787 Agate Street, Eugene, OR 97403–1923; 1–800–336–5191.

FYI on Questions and Answers: Answers to Commonly Asked "Primary and Secondary School Internet User" Questions
J. Sellers, 1994

This memo is directed to educators, school media specialists, and school administrators who recently connected to the Internet, who are accessing the Internet via dial-up or another means that is not a direct connection, or who are considering an Internet connection as a resource for their schools. Free. Anonymous FTP from **archie.internic.net** (**198.49.45.10**); change directory (cd) to *fyi* and type *get fyi22.txt*.

The Internet Handbook for School Users
Nancy Protheroe and Elizabeth Wilson, 1994; ED 375 821

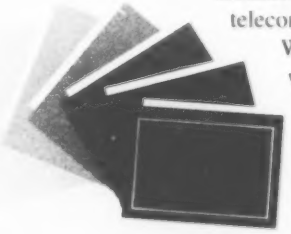
This 120-page handbook is suitable for readers considering school use of the Internet as well as novice and experienced users looking for Internet services and resources. It includes commonly asked questions and answers about educational implementation and use of the network; information about search tools; and a guide to K–12 Internet resources such as newsgroups, collaborative projects, and interesting sites. Educational Research Service (ERS) subscribers $12; others $24, plus $3.50 postage and handling. ERS, 2000 Clarendon Boulevard, Arlington, VA 22201; 703–243–2100.

K–12 Network Technology Planning Guide
California Department of Education, 1994

This guide is intended to help school administrators, teachers, and technology directors understand technical issues relating to network planning. It provides an indepth view of the major areas that must be considered and includes a staff training section, case studies, and resource lists. $11.95. K–12 Network Planning Unit, Education Technology Office, California Department of Education, P.O. Box 944272, 721 Capitol Mall, Sacramento, CA 94244–2720; 916–654–9662. Also available free via Gopher at **goldmine.cde.ca.gov**; go to California Department of Education; select Technology; then select the K–12 Network Technology Planning Guide.

Receptivity to Telecommunications Among K–12 Teachers in a Rural State
Aimee A. Howley and Craig B. Howley, 1994; ED 374 958

This survey examined the computer skills, available technology resources, and attitudes toward telecommunications of 262 K–12 teachers in West Virginia. In general, the teachers were highly receptive to technology use for themselves and their students, but lacked the necessary hardware and software to go online. The study



also outlined larger issues with the potential to affect rural teachers' use of technology such as the privatization of telecommunications. $7.70 plus postage. ERIC Document Reproduction Service, 7420 Fullerton Road, Suite 110, Springfield, VA 22153–2852; 1–800–443–ERIC.

The Switched-On Classroom: A Technology Planning Guide for Public Schools in Massachusetts
Massachusetts Software Council, 1994

This handbook offers a model for integrating technology into the classroom, documents successful examples of implementation, and provides a directory of resources to support the technology adoption process. $20. Massachusetts Software Council, One Exeter Plaza, Suite 200, Boston, MA 02116–2831.

Technology and Education Reform: The Reality Behind the Promise
Barbara Means, editor, 1994

This book illustrates how technology can support school reform, identifies promising technologies, and discusses how technology can help students and teachers accomplish their tasks. $29.95 plus 4.50 shipping and handling. Jossey-Bass, Inc., 350 Sansome Street, San Francisco, CA 94104–9825; 415–433–1767.

Technology and the Organization of Schooling
Jan Hawkins, 1993; ED 359 933

This technical report (No. 28) describes how technology can be designed and used to improve the educational system over the long term. Strategies include actively engaging students with multiple resources and people and providing environments in which students are personally well known. $3. Education Development Center, Inc., Center for Children and Technology, 96 Morton Street, 7th Floor, New York, NY 10014.

Technology Making a Difference: The Peakview Elementary School Study
Brent G. Wilson, Roger Hamilton, James L. Teslow, and Thomas A. Cyr, 1994

This case study (IR–98) focuses on the effects of implementing new technology at the elementary school level. The results include increases in student motivation and achievement. The authors document candid comments from teachers and students about the transition from traditional teaching methods to integrating new technology in the classroom. $15 plus $3 for shipping. ERIC Clearinghouse on Information & Technology, Syracuse University, 4–194 Center for Science and Technology, Syracuse, NY 13244–4100; 1–800–464–9107.

Telecommunications and Education: Surfing and the Art of Change
Gloria Frazier and Deneen Frazier, 1994; ED 377 834

This guide for using the Internet and other computer networks is designed to further education reform. It was written to help school board members, administrators, teachers, and other education leaders understand networks, assess their benefits, select appropriate vendors, and go online. $35 plus $5 shipping and handling. National School Boards Association Distribution Center, P.O. Box 161, Annapolis Junction, MD 20701–0161; 1–800–706–6722.

Telecommunications and K–12 Education: Findings from a National Survey
Margaret Honey and Andrés Henríquez, 1993; ED 359 923

This booklet reports on a survey conducted to obtain a systematic profile of activities currently being undertaken by kindergarten through grade 12 educators in telecommunications technology. Based on the responses of 550 educators from 48 states, selected because of their involvement with computer technology, this survey represents the first large-scale description of educators' telecommunications practices. Free. Request a copy via e-mail to **cct@edc.org** or write to Education Development Center, Inc., Center for Children and Technology, 96 Morton Street, 7th Floor, New York, NY 10014.

Telecommunications in the Classroom
Sara Armstrong, 1994; 2nd Edition

This book is an introduction, guidebook, and source of lesson plans for using telecommunications in the classroom. It describes various services and the Internet, provides details about becoming connected, and covers ethics and equity issues. $10. International Society for Technology in Education, 1787 Agate Street, Eugene, OR 97403–1923; 1–800– 336–5191.

Using Technology To Support Education Reform
U.S. Department of Education, 1993; ED 364 220

This report (No. 065–000–00604–9) outlines ways in which technology can be used to support education reform. $7. New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250–7954; 202–512–1800.

Way of the Ferret: Finding Educational Resources on the Internet
Judi Harris, 1994

This handbook is designed to help educators acquire the knowledge, skills, and experience necessary to locate and use resources found on the Internet. It assumes readers have access to the Internet and some experience with a modem, communication software, and word processing. It provides an extensive listing of Internet-based education sites. International Society for Technology in Education. $24.95 (members $22.45). 1787 Agate Street, Eugene, OR 97403–1923; 1–800–336–5191.

The Whole Internet User's Guide and Catalog
Ed Krol, 1994; 2nd Edition

This user's guide to the Internet covers basics such as electronic mail and newsgroups as well as more elaborate research tools such as Gopher, WAIS, and the World Wide Web. The book includes extensive examples for Unix-based machines. $24.95. Published by O'Reilly & Associates and available at bookstores or through the International Society for Technology in Education, 1787 Agate Street, Eugene, OR 97403–1923; 1–800–336–5191.

Zen and the Art of the Internet: A Beginner's Guide
Brendan P. Kehoe, 1994

This book covers Internet addresses, e-mail, FTP, USENET newsgroups, Telnet, and other software tools, as well as print and online resources for Internet users. $23.95. Published by Prentice Hall and available at bookstores or through the International Society for Technology in Education, 1787 Agate Street, Eugene, OR 97403–1923; 1–800–336–5191.

– Compiled by Carol Boston and Barak Stussman, ACCESS ERIC.

Electronic Journals

Many organizations that maintain Gopher and Web sites post articles from print journals. Other organizations post entire issues. Two online journals of interest are the following:

■ ***Electronic School on the Web***. This electronic publication from the National School Boards Association is for K–12 school leaders and educators working to enhance student learning through the "judicious and appropriate use of technology." It covers networking trends and developments, case studies, and controversies relevant to education and technology in elementary and secondary schools throughout North America. Point your Web browser to: **http://www.access.digex.net/~nsbamags/e-school.html**. (A print version of *The Electronic School* is included as a supplement to *The American School Board Journal* and *The Executive Educator*.)

■ ***Classroom Connect***. This publication is targeted to K–12 teachers who use the Internet and/or online services in the classroom. Recent issues have explored technology funding, acceptable use policies, lesson plans, and other online resources. Request a free sample copy by sending your snail mail address to connect@wentworth.com (introductory subscription rate is 9 issues for $39) or browse selected highlights at **http://wentworth.com**.

Putting It All Together: An Action Plan

This issue of The ERIC Review *is intended to be a training tool for people who are helping others learn to use telecommunications to improve teaching and learning. We hope it will serve as a useful resource and an invitation for further exploration.*

Tips for Using Computer Networks

■ **It's organized chaos out there.** No one person or organization is in charge of the Internet; it's constantly changing and growing. Reference books, classes, and knowledgeable friends can help you get started. And the more you go online, the more you'll find out about what's out there.

■ **Jump in and get your feet wet.** The best way to learn is through hands-on experience. Try one of the education sites described in this journal.

■ **Don't worry, you can't break anything.** When you tap into another computer, there are limits to what you can do with it. If you press the wrong keys, you'll just get an error message. For example, when you are trying to make a remote connection, there's a chance that your computer might "lock up." If that happens, you just reboot it. If the computer you're trying to connect to is temporarily down, or you key in the wrong address, you might receive the message, "Connection failed."

■ **If a first you don't get in, try, try again.** There are limits to the number of users who can access one specific database, information service, or electronic site at one time. If you can't get through, just try again at another time. You might notice that peak hours are predictable—perhaps everyone tries to get into your favorite site between 9 a.m. and 4 p.m. on weekdays and you'll have better luck getting in earlier, later, or on weekends.

■ **There are a lot of terms, but you don't need to become bogged down in them.** Computer technology is nothing more than another way to connect people and information.

Next Steps

■ Help others find low-cost connections to the Internet (see "Getting on the Internet" on page 7 for ideas).

■ Join a listserv to discuss topics of common interest with your peers. To subscribe, you generally send a message to listserv@*address*. Leave the subject line blank. In the body of the message, type subscribe *listservname firstname lastname*. For example, to subscribe to a listserv on the use of the Internet in education (EDNET@nic.umass.edu):

Address an e-mail message to listserv@nic.umass.edu.

Type subscribe EDNET John Doe.

The following listservs may also be of interest:

Educational technology
EDTECH@msu.bitnet

Elementary and secondary school administration
K12ADMIN@listserv.syr.edu

School library and media services
LM_NET@listserv.syr.edu

School improvement ideas for communities
SATL-CON@listserv.syr.edu

A full list of education-related listservs may be obtained from **ftp.virginia.edu** in the subdirectory *pub/IRD* as file *educatrs.lst*. K–12 listservs are described in another section of the *Internet Resource Directory for Educators*, which can be obtained by FTP file transfer from the same location in the file *IRD-listservs.txt*.

■ Participate in USENET newsgroups, discussion forums on an electronic bulletin board system accessible via the Internet (contact your system operator for specific instructions). Among the thousands of topics available are **k12.chat.teacher** for general discussion among K–12 teachers and **k12.ed.tech** on technology education.

■ Help educators in your community integrate telecommunications into teaching and learning activities and evaluate the effects of this technology on student motivation and achievement.

■ Invite students, parents, business people, and other community members to share their networking expertise with the schools.

ERIC Directory

Educational Resources Information Center (ERIC)
U.S. Department of Education
Office of Educational Research and Improvement (OERI)
555 New Jersey Avenue NW
Washington, DC 20208–5720
Telephone: (202) 219–2289
Internet: eric@inet.ed.gov

Clearinghouses

Adult, Career, and Vocational Education
The Ohio State University
1900 Kenny Road
Columbus, OH 43210–1090
Toll Free: (800) 848–4815
Telephone: (614) 292–4353
Internet: ericacve@magnus.acs.ohio-state.edu

Assessment and Evaluation
The Catholic University of America
210 O'Boyle Hall
Washington, DC 20064
Toll Free: (800) 464–3742
Telephone: (202) 319–5120
Internet: eric_ae@cua.edu

Community Colleges
University of California at Los Angeles
3051 Moore Hall
Los Angeles, CA 90024–1521
Toll Free: (800) 832–8256
Telephone: (310) 825–3931
Internet: eeh3usc@mvs.oac.ucla.edu

Counseling and Student Services
University of North Carolina at Greensboro
School of Education
101 Park Building
Greensboro, NC 27412–5001
Toll Free: (800) 414–9769
Telephone: (919) 334–4114
Internet: ericcass@iris.uncg.edu

Disabilities and Gifted Education
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091–1589
Toll Free: (800) 328–0272
Telephone: (703) 264–9474
TDD: (703) 264–9449
Internet: ericec@inet.ed.gov

Educational Management
College of Education
1787 Agate Street, Room 100
5207 University of Oregon
Eugene, OR 97403–5207
Toll Free: (800) 438–8841
Telephone: (503) 346–5043
Internet: ppiele@oregon.uoregon.edu

Elementary and Early Childhood Education
University of Illinois
805 West Pennsylvania Avenue
Urbana, IL 61801–4897
Toll Free: (800) 583–4135
Telephone: (217) 333–1386
Internet: ericeece@ux1.cso.uiuc.edu

Higher Education
The George Washington University
One Dupont Circle NW, Suite 630
Washington, DC 20036–1183
Toll Free: (800) 773–3742
Telephone: (202) 296–2597
Internet: eriche@inet.ed.gov

Information & Technology
Syracuse University
4–194 Center for Science and Technology
Syracuse, NY 13244–4100
Toll Free: (800) 464–9107
Telephone: (315) 443–3640
Internet: eric@ericir.syr.edu
AskERIC (Internet-based question-answering service): askeric@ericir.syr.edu

Languages and Linguistics
Center for Applied Linguistics
1118 22nd Street NW
Washington, DC 20037–0037
Toll Free: (800) 276–9834
Telephone: (202) 429–9292
Internet: eric@cal.org

Reading, English, and Communication
Indiana University
Smith Research Center, Suite 150
2805 East 10th Street
Bloomington, IN 47408–2698
Toll Free: (800) 759–4723
Telephone: (812) 855–5847
Internet: ericcs@ucs.indiana.edu

Rural Education and Small Schools
Appalachia Educational Laboratory
1031 Quarrier Street
P.O. Box 1348
Charleston, WV 25325–1348
Toll Free: (800) 624–9120
Telephone: (304) 347–0400
Internet: lanhamb@ael.org

Science, Mathematics, and Environmental Education
The Ohio State University
1929 Kenny Road
Columbus, OH 43210–1080
Toll Free: (800) 276–0462
Telephone: (614) 292–6717
Internet: ericse@osu.edu

Social Studies/Social Science Education
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, IN 47408–2698
Toll Free: (800) 266–3815
Telephone: (812) 855–3838
Internet: ericso@indiana.edu

Teaching and Teacher Education
American Association of Colleges for Teacher Education
One Dupont Circle NW, Suite 610
Washington, DC 20036–1186
Toll Free: (800) 822–9229
Telephone: (202) 293–2450
Internet: ericsp@inet.ed.gov

Urban Education
Box 40, Teachers College
Columbia University
New York, NY 10027–6696
Toll Free: (800) 601–4868
Telephone: (212) 678–3433
Internet: eric-cue@columbia.edu

Adjunct Clearinghouses

Art Education
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, IN 47408–2373
Toll Free: (800) 266–3815
Telephone: (812) 855–3838
Internet: ericso@indiana.edu

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Chapter 1 Technical Assistance Center
PRC, Inc.
2601 Fortune Circle East
One Park Fletcher Building, Suite 300–A
Indianapolis, IN 46241–2237
Toll Free: (800) 456–2380
Telephone: (317) 244–8160
Internet: prcinc@delphi.com

Child Care
National Child Care Information Center
301 Maple Avenue West
Vienna, VA 22180
Toll Free: (800) 616–2242
Telephone: (703) 938–6555
Internet: agoldstein@acf.dhhs.gov

Clinical Schools
American Association of Colleges for Teacher Education
One Dupont Circle NW, Suite 610
Washington, DC 20036–1186
Toll Free: (800) 822–9229
Telephone: (202) 293–2450
Internet: iabdalha@inet.ed.gov

Consumer Education
National Institute for Consumer Education
207 Rackham Building, West Circle Drive
Eastern Michigan University
Ypsilanti, MI 48197–2237
Toll Free: (800) 336–6423
Telephone: (313) 487–2292
Internet: nice@emuvax.emich.edu

ESL Literacy Education
Center for Applied Linguistics
1118 22nd Street NW
Washington, DC 20037
Telephone: (202) 429–9292, Extension 200
Internet: ncle@cal.org

Law-Related Education
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, IN 47408–2698
Toll Free: (800) 266–3815
Telephone: (812) 855–3838
Internet: ericso@indiana.edu

Test Collection
Educational Testing Service
Princeton, NJ 08541
Telephone: (609) 734–5737
Internet: mhalpern@rosedale.org

U.S.-Japan Studies
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
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Internet: eabrooks@indiana.edu

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